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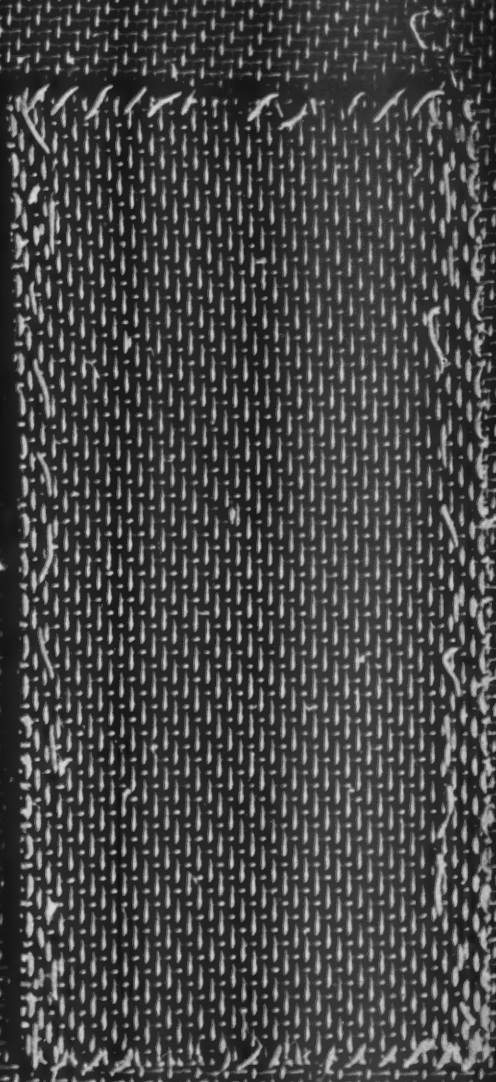
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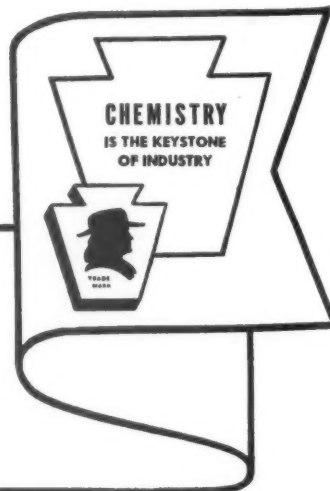
JUNE • 1942



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Chemicals
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*The Journal of the
Pacific Coast Industry*

JUNE • 1942

Vol. 16 — No. 6

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Wage Agreement Adjusted To War Conditions

Wage increase of 10c per hour given men and women employed over 6 months; 7½c under 6 months; Vacation requirements liberalized; Call time and shift schedule clauses altered; Emergency employment of women in men's jobs provided for; Joint reference committee set up to determine whether men's jobs have been materially changed for the employment of women; Unions ratify new agreement by vote of 7,319 to 1,508.

THE stress of war conditions has put the uniform labor agreement between the two A. F. of L. pulp and paper unions and the mills on the Pacific Coast to a severe test and it has come through with flying colors. The machinery for negotiating agreements, set up in 1934, functioned perfectly at the end of May this year when employee-employer groups sat down together in the auditorium of the Public Service Building in Portland and modified the previous year's agreement to meet changed conditions.

It isn't the machinery to which the credit belongs but to the men who designed it back in 1934 and to those who have made it work successfully in the ensuing years. A labor agreement, like any other contract or treaty, is no better than the intent of the parties making it. The International Brotherhood of Pulp, Sulphite & Paper Mill Workers, the International Brotherhood of Paper Makers and the representatives of the Pacific Coast Association of Pulp and Paper Manufacturers, have met together with honest and fair intent. Each possessed a sincere desire to cooperate. The result is a mutually satisfactory agreement arrived at through democratic processes.

Approximately 275 men sat down at the conference. Of these around 200 were union delegates and 75 represented management. From this group were drawn the members of the negotiating committees. Representing the Pulp, Sulphite & Paper Mill Workers were: John Burke, international president; John Sherman, sixth vice president; James S. Killen and Ivor Isaacson, international representatives; W. C. Adams, E. C. Kenyon, John Cole and R. H. Clark.

Representing the Paper Makers were: Ernest Lafibton, vice president; Art Hannaford and Bart Tidland, international representatives; Paul Neer, Harry Cole, Clarence Clark and Waldo Baker.

The employers committee con-

sisted of: J. D. Zellerbach, chairman; John H. Smith, A. R. Heron, N. M. Brisbois, Nils Teren, R. B. Wolf, Irving T. Rau, W. S. Lucey, Walter DeLong, H. L. Wollenberg, R. S. Wertheimer and L. S. Burdon.

Working in the presence of all the delegates the negotiating committees made the following changes in the 1941-1942 agreement which will apply to the 1942-1943 agreement running from June 1, 1942, through May 31, 1943.

I. Purpose of Agreement

"The parties to this agreement are parties to an agreement known and hereinafter referred to as the Uniform Labor Agreement. Said Uniform Labor Agreement was modified and re-executed by the parties thereto on June 1, 1941. Notice of desire for changes in said agreement having been given in accordance with its terms, the changes set forth in this, Supplemental Agreement are hereby mutually agreed upon by the parties.

"Effective from June 1, 1942, and continuing until terminated or modified as below provided, the parties agreed to be bound by all the terms and conditions of the said Uniform Labor Agreement excepting as set forth below.

II. Terms of Agreement

"This Agreement shall be in effect from June 1, 1942, to and including thirty days after notice of termination given in writing by either party to the other; but such notice cannot be given prior to May 1, 1943.

III. Wages and Vacations (Changes In Exhibit A)

"1. Effective as of June 1, 1942, wage rates shall be paid in accordance with Exhibit A in the Uniform Labor Agreement except as follows:

"A. For Men's Jobs: Rates in effect as of May 31, 1942, for men's jobs will be increased seven and one-half (7½) cents per hour, making the base rate for

TABLE I

Average Hourly Earnings in Cents of Productive Employees (Exclusive of Converting Employees) in Pulp and Paper Manufacturing.

(Source: Calculated from tables received from A.P.P.A.)

	June to December Inclusive							
	1934	1935	1936	1937	1938	1939	1940	1941
Pacific Coast	58.3	62.0	66.9	79.7	79.6	79.8	83.8	94.7
All other U. S. Regions	51.3	52.7	53.1	62.3	61.3	61.6	65.0	72.5
North East (New England)	52.2	53.8	53.8	62.4	60.8	61.2	64.0	76.6
Middle Atlantic	53.0	55.3	55.9	65.0	63.9	64.3	76.6	74.7
Lake States	52.7	53.9	54.9	65.2	65.0	65.6	68.0	79.9
Central (North)	51.6	53.4	54.0	61.7	62.6	62.4	64.4	71.9
Central (South)	46.5	47.4	47.7	55.9	54.9	55.1	59.5	66.5
Southern (East)	45.8	47.0	47.7	56.9	57.3	55.9	61.7	79.0

TABLE II

Average Weekly Earnings of Productive Employees (Exclusive of Converting Employees) in Pulp and Paper Manufacturing.

(Source: Calculated from tables received from A.P.P.A.)

	June to December Inclusive							
	1934	1935	1936	1937	1938	1939	1940	1941
Pacific Coast	\$20.32	\$22.80	\$25.73	\$29.60	\$26.49	\$30.12	\$32.33	\$36.54
All Other U. S. Regions	19.59	19.74	21.74	23.85	23.19	24.65	26.11	30.01
North East (New Eng.)	17.95	19.83	21.62	23.88	22.39	24.27	24.35	29.80
Middle Atlantic	18.57	20.88	23.23	24.72	24.04	26.74	26.29	31.97
Lake States	18.18	20.43	22.98	25.79	15.17	26.62	27.52	31.17
Central (North)	17.34	20.04	22.06	23.65	23.41	25.23	26.03	31.05
Central (South)	16.18	19.39	19.41	21.09	20.79	21.85	23.25	27.22
Southern (East)	14.57	17.60	18.43	20.98	21.39	21.82	24.52	28.81

male common labor eighty-two and one-half (82½) cents per hour.

"B. For Women's Jobs: Rates in effect as of May 31, 1942, for women's jobs, will be increased seven and one-half (7½) cents per hour, making the base rate for women's jobs seventy (70) cents per hour.

"C. Such increases will apply to all employees having less than six (6) months of service with the Signatory Company. All employees having six (6) months of service with the Signatory Company (and other employees upon completing 6 months of service) will receive an additional 2½ cents per hour.

"2. Vacations.

"A. Eligibility. To be eligible for a vacation the employee must have been an employee for not less than one (1) year prior to June 1 of the current contract year.

"B. Employees in Armed Service. Any employee serving in the armed forces of the United States who has fulfilled the qualifications for a vacation during the year preceding June 1 of the current contract year will be given vacation pay.

"C. Employees are to have the privilege of drawing the vacation

pay and continuing to work in lieu of taking the vacation.

IV. Call Time

"1. For Holidays. Two (2) hours call time shall be paid to any employee required to work during any of the holiday periods specified in Section 7 of the Uniform Labor Agreement.

"2. Call Time for Tour Workers. Any tour worker who is called to return to work, after having completed his own shift and after having left the mill property, except for work extending into his next scheduled shift, shall be allowed two (2) hours call time.

V. Schedules of Shifts and Days Off

"It is recognized by both parties that the requirements of war production and the armed services during the emergency may create shortages of workers. To make possible the continued operation of the mill, the parties have agreed to do the following:

"When required by such shortage of workers, the management is authorized (a) to change existing schedules of shifts and hours per shift, applying to jobs, departments or the entire plant; and (b) to change or suspend the designated day off provided in Section II. In any case of such change, the procedure for consultation with the

Union Standing Committee provided in Section 20 shall be followed.

VI. Emergency Employment of Women

"1. When it is necessary, women will be employed in jobs formerly held by men.

"2. When a woman completely takes over a job formerly held by a man, she will receive the rate of the job subject to the same probationary period provided for new women employees. The starting rate for such probationary period shall be 7½ cents less than the job rate applicable to her length of service with the Signatory Company.

"3. Where it is necessary to change materially the duties or responsibilities of a job filled by a man, so that it can be filled by a woman, the woman's rate shall apply to the modified job. Any disagreement as to whether the change in duties or responsibilities is 'material' will be referred to and decided by the Reference Committee herein provided. Pending the decision by such committee, the change will be initiated as proposed by management with the understanding that the decision of the committee is to be made retroactive.

"4. Women workers taking over men's jobs, either completely or in modified form, will acquire no seniority in such jobs.

"5. Women workers already employed on women's job who transfer from such jobs to take over men's jobs either completely or in modified form, will retain and accumulate their seniority in the women's jobs from which they transfer.

"6. A JOINT REFERENCE COMMITTEE will be established as follows:

- (a) One representative of the I. B.P.M.
- One representative of the I. B.P.S. & P.M.W.
- One representative of the P. C.A. of P.&P. Mfgs.

The Joint Reference Committee shall adopt, by unanimous decision, standard recommendations for the initial guidance of mill managements and mill standing committees in determining whether men's jobs have been materially changed for the employment of women. Any case of disagreement referred to the Joint Reference Committee will be handled by the representative of the International Brotherhood concerned and the representative of the manufacturers.

VII.

"It is the intent of the parties hereto that when notice of termination of this Supplemental Agreement is given by either party, a conference shall be arranged for negotiation of further extension of the Uniform Labor Agreement, with such changes as may then be agreed upon; that the basis of such negotiation shall be the Uniform Labor Agreement as amended by this Supplemental agreement, except that changes introduced in paragraphs II, III, V and VI hereof shall have been adopted to meet the present and prospective emergency situation, shall not be deemed to be a precedent for future agreements."

Union Program

● The negotiating committees of the two unions entered the meeting with the following program:

They asked for 15 cents per hour increase. The request was compromised as noted above to 7½ cents for employees working less than 6 months and 10 cents for employees working more than 6 months. They also asked that the vacation clause be changed so that employees working one year instead of two be given

one week vacation with pay. This was agreed upon.

The union negotiators asked for and obtained "call time" for holidays. In the past men working on holidays were not paid for "call time" providing they were given sufficient advance notice that they were to work on the holiday. Now, all employees working on holidays receive two hours extra pay regardless of advance notice.

A further union request was that employees serving in the armed forces of the United States who fulfilled the qualifications for vacation pay during the year preceding June 1, 1942, be given the pay regardless of whether they enlisted or were drafted. This was agreed to by the employers.

Bargaining From May 26th to 30th

● The period of negotiations between the unions and the employers lasted from May 26th through May 30th. The unions presented their program on the first day. This was followed by a period of discussion to insure understanding by the employer committee. Then the latter met and prepared their reply stating

what they were willing to do plus their own requests of the unions. Discussions were followed by the manufacturers' final offer which was voted upon and accepted by the union delegates present on May 28th. Their acceptance was announced to the employers on the 29th and the remaining time was devoted to clarification of the agreement.

The agreement was mimeographed and transmitted to the locals and a vote called for. The favorable result of the vote was in by Monday, June 8th, and the agreements were signed by Russell T. Drummond, vice president of the Paper Makers and John Sherman, vice president of the Pulp, Sulphite Workers, John Smith, president of the Pacific Coast Association of Pulp & Paper Manufacturers. The agreements were then forwarded to each mill for signing by the local officers and mill managers.

The agreement was ratified by a 5 to 1 vote, 7,319 for and 1,508 against. A total of 8,827 men and women out of approximately 20,000 employees voted, the smallest vote in recent years. A year ago the



AN IMPORTANT OCCASION, the signing of the Ninth Annual Wage Agreement between the brotherhoods and the Pacific Coast pulp and paper manufacturers on June 8, 1942, in Portland.

Left to right, seated, JOHN H. SMITH, President of the Pacific Coast Association of Pulp & Paper Manufacturers; RUSSELL T. DRUMMOND, Sixth Vice President of the International Brotherhood of Paper Makers; and, JOHN SHERMAN, Fifth Vice President, International Brotherhood of Pulp, Sulphite & Paper Mill Workers. Standing, MILES MURRAY, Assistant to the Social Security and General Safety Supervisor, Crown Zellerbach Corporation and Rayonier Incorporated, who assisted at the ceremonies of signing the agreements for each mill.

Since the first agreement, signed in August, 1934, initiated close cooperation between employees and employers in the Pacific Coast industry, no pulp or paper mill employee has lost a day's work because of a labor dispute.

vote was 13 to 1 in favor of the agreement.

Praise for the orderly, democratic negotiations came from both unions and employers. John Burke, president of the International Brotherhood of Pulp, Sulphite & Paper Mill Workers, said before returning to his headquarters in Albany, N.Y.,

"We have completed the annual wage conference for our ninth year of relations with Pacific Coast pulp and paper mill employers with a liberal wage adjustment and a better feeling and a better understanding than we've ever enjoyed before."

John Sherman, Pacific Coast vice president of the same union, commented, "This pact provides a code of understanding on working conditions peculiar to wartime, and is being entered into separately so that the changes will not disturb the structure of the basic labor agreement which has carried the two groups through eight years of mutually satisfactory bargaining results."

"It is a fine conclusion to a constructive wage conference," remarked Ernest B. Lambton, vice president of the International Brotherhood of Paper Makers, Al-

bany, N.Y., who attended the meetings.

The employers likewise expressed satisfaction. John H. Smith, president of the Pacific Coast Association of Pulp and Paper Manufacturers stated, "I believe this meeting again emphasizes the soundness of negotiations carried on in open meetings whereby all the delegates may hear the statements made by the negotiating committee, as this doubtless enables the union delegates to more thoroughly explain to the members of the locals the reasons upon which the decisions were based."

Average Hourly Earnings

● The new increases will bring the average hourly earnings in the Pacific Coast mills to over a dollar an hour. In 1941 the average hourly earnings were 94.7 cents as will be noted from the accompanying table. The Pacific Coast industry continues to lead all other regions in hourly and weekly wage payments.

The wage increase just announced will add well over \$3,000,000 annually to the payrolls of the thirty-four manufacturers participating.

War Causes Temporary Crown Changes

● Paul Middlebrook, resident manager of the Crown Willamette Paper Company division of Crown Zellerbach Corporation at Lebanon, Oregon, is now in San Francisco temporarily assisting Alexander R. Heron, director of industrial and public relations. Following attendance at the management and wage conference at Portland, Oregon, Mr. Middlebrook drove to San Francisco with Mrs. Middlebrook and children.

Mr. Middlebrook has had a long and varied experience with Crown Zellerbach Corporation and predecessor companies, having first joined the Floriston Paper Company in Los Angeles, California in 1912. Since then he has served in Camas, West Linn, Portland, San Francisco and Floriston, going to Lebanon, Oregon, as resident manager in 1937 after serving in Portland as assistant to Vice President Berkey. Recently, Mr. Middlebrook was proffered the mayorship of Lebanon and actually served in an honorary capacity for a day, but press of company duties caused him to decline the honor.

Business and professional groups of Lebanon joined with employees of the paper mill in marking Mr. Middlebrook's departure with parties and gifts.

Malcolm Otis, assistant resident manager at West Linn, Oregon, has been transferred to Lebanon to fill the duties of Mr. Middlebrook. Clarence Enghouse has assumed Mr. Otis' duties at West Linn as assistant to resident manager Clarence Bruner.

Peter Duignan, who has been assistant to Mr. Heron in the industrial relations and public relations departments of Crown Zellerbach Corporation and Rayonier Incorporated is now serving with the United States Army Air Corps in Arizona. Mr. Duignan is a first lieutenant and his duties are primarily of a public relations nature.

Victor Gault, personnel supervisor of the Crown Zellerbach Corporation mill at Camas, Washington, has been spending the past several months in San Francisco assisting Mr. Heron in the industrial relations

department. During his absence, the duties at Camas have been under the direct supervision of Earl A. Paul.

211 Camas Men In Armed Forces

● As of the first part of June, 211 employees of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, had joined the armed forces for active duty.

B. C. Operators Disappointed At Fixing of \$50 Newsprint Price

● Action of the Office of Price Administration in ordering continuance of the \$50 a ton price for newsprint in the United States was a disappointment to British Columbia paper makers who had been led to believe that a \$3 increase was contemplated.

"We are naturally disturbed to learn of the action of the OPA," said an executive of Powell River Company, largest newsprint producer on the west coast, "especially since there has been no increase in the base price of newsprint in the past 52 months, notwithstanding heavy increases in the cost of production and freight."

"By this act OPA has extended its price-fixing powers into Canada. If the OPA can fix the price of British Columbia newsprint, there is no reason why it cannot do likewise on lumber, shingles, fish, metals and other products shipped to the United States."

Of equal importance to other factors in the rise of production costs has been the prospective increase in unit costs due to probable decline in demand. The exchange premium on the U. S. dollar no longer compensates the newsprint producers of Canada for losses that would otherwise be sustained in doing business with the American market.

Where the pulp and paper makers made their money during the first year of the war was in the substantial increase in volume of sales which brought down unit costs and increased the net profit.

Pulp producers were more fortunate than the newsprint men in that they advanced their price after war was declared, but the rate on export sales, especially in the United States, has remained the same for some time.

However, about the same time the newsprint producers announced their intention of an upward revision of the price schedule on export sales, similar action was taken by pulp producers.

In both cases the price advance was blocked by the OPA in the United States.

Other branches of the industry in Canada are more fortunate because they look to the domestic market for a larger share of their business. They adjusted their prices to meet the rise in costs until the price ceiling went into effect.

Chemical pulp producers have a ready market for their output, and so far the British Columbia newsprint mills have been kept busy, but the trend of newsprint sales from now on is expected to be lower. British Columbia has lost a large part of its market to Australia and Pacific countries, and American demand is beginning to reflect the accumulation of stocks by publishers in recent months. Newsprint is also being actively conserved.

Harry Fair Appointed WPB Regional Director

● Appointment of Harry H. Fair, well known San Francisco industrialist as regional director of the War Production Board in charge of California, Arizona, and Nevada was announced in Washington, D. C., May 29th.

Mr. Fair is chairman of the board of directors and treasurer of the Soundview Pulp Co., a director of the Caterpillar Tractor Co., and president of the F. E. Booth Co., Inc., pioneer California fish canning concern.

He is the eleventh regional director named in WPB's program to decentralize its activities and distribute much of its operations through 13 regional offices in various parts of the country.

Under the organization plan for the San Francisco region a deputy director may be appointed with jurisdiction over the Los Angeles area. The deputy would have on his staff an organization of WPB specialists and experts whose duties would parallel those of the San Francisco staff.

Officials said it was likely that Mr. Fair would handle administrative work for the Seattle area as well as for the San Francisco region.

Rayonier Port Angeles Appointments

● Two recent appointments of interest occurred at the Port Angeles division of Rayonier Incorporated. Eldo A. Florence, head viscosity tester for several years, was appointed an assistant to the safety and personnel supervisor in charge of safety work and is handling instruction of first aid classes and other activities along safety lines. Wesley M. Johnson was named treasurer-manager of the Rayonier Credit Union by that group, which has its headquarters in the plant offices.

Waste Paper Response Produces Momentary Surplus

● According to reports received by the Bureau of Industrial Conservation, the response of the American people to the salvage for victory waste paper program has been so whole-hearted that there is an unusual surplus of this important war material.

Commenting upon the success of the waste paper collection campaign, Lessing J. Rosenwald, chief of the bureau said on May 26th, "If similar intensive efforts in the collection of scrap rubber and scrap metals can now be carried out, the public can go a long way toward filling the Nation's need for these vital materials."

Meanwhile, the bureau advised each community to check its local markets to learn how much waste paper local dealers can handle. In many instances, paperboard mills have been offered more waste paper than their present inventory and production capacity can handle. The surplus backs up on the dealers whose storage facilities become overtaxed with the result that they either reject waste paper or accept it only on reduced terms. Then in turn junk dealers refuse to accept or purchase waste paper.

Mr. Rosenwald pointed out that there is the possibility of a new shortage developing next winter, in view of the fact that the potential supply of waste paper will tend to decrease as the war progresses, whereas the demand for paperboard containers will increase as the volume of war production develops.

Dilling Tells Bakers No Waxed Paper Shortage

● Speaking before the Pacific Northwest Bakers' Conference in Portland, April 14-16th, Cecil L. Dilling, manager, Western Waxed Paper Co., North Portland, Division of Crown Zellerbach Corporation, told the bakers that there was no shortage of waxed paper for bread wrapping and that by taking certain steps to eliminate waste the future supply could be assured. Quoting Mr. Dilling:

"A great many changes have occurred since the last time we met—the most pronounced is that today we find ourselves operating with priorities, allotments, etc., regardless of the industry we may be engaged in.

"At one time or other we hear reports as to the shortages of nearly every material we use and paper has been no exception. While there has been a shortage of certain grades of paper, there really isn't any shortage as far as waxed paper is concerned in its relationship to the baking industry.

"It might be interesting to know why we have heard and read of paper shortages—to start with, it was necessary for the government to take a large portion of certain types of paper, for instance the expansion of the steel industry made it necessary to use 45,000 tons of kraft paper. This kraft paper is used between the sheets of stainless steel. The army requires 1500 tons of paperboard shirt boxes; for ammunition boxes, 360,000 tons will be used in 1942. It takes 15 tons of blueprint paper for every destroyer turned out and for just the item of canned tomatoes for the army, 1,000 tons of cartons are needed. I am sure these figures are quite staggering to the layman.

"Many months ago a committee was appointed to investigate the situation with respect to the waxed paper industry. Their report was most illuminating as to the possibility of the tremendous amount of paper that might be saved were both the waxed paper industry and the bakers to cooperate in eliminating downright waste. For instance to reduce the weight of the innerwrap from 30 lb. to 25 lb. basis would mean a saving of 700 tons.

"Certain waxed paper manufacturers in the past have used a very thick wall core. A standardization of this core to 1/4-inch thickness means a saving of 2800 tons. Some manufacturers have been in the habit of wrapping each roll of waxed paper with a heavy corrugated outside wrapper. Elimination of this type of wrapper and the adoption of a strong kraft, or a wrapper of like strength, would mean a saving of between 5 and 6,000 tons of paper. It has been the habit of the industry to trim rolls of innerwrap. To eliminate this trimming would save approximately 1500 tons.

"Now here is one point that is entirely within the control of the baker. The recognized satisfactory overlap on a loaf of bread is 1 1/4 inches. If the baker will instruct his wrapping machine operators they will find they can effect a tremendous saving by not using more paper on the overlap than necessary. Many times the bread changes in proof from day to day and many operators through lack of knowledge use as much as 3 inches for overlap on the bottom of their loaf. A conservative estimated saving on this item

could be placed at 5,000 tons of paper.

"The figures I have given you are the annual savings of the industry in this country and if carried out, would certainly forestall any possible shortages of paper to the baking industry. There is no reason to have hysteria which would induce bakers to buy above their normal inventories.

"About the only major problem that the waxed paper industry is confronted with to date is the color of the paper. There has been some slight reduction in the whiteness of bleached sheets and there no doubt will be still more. This is occasioned by the fact that chlorine, which is the bleaching agent, is used in the manufacture of gases which may or may not be used in warfare. The reduction in the whiteness of the sheet will have no effect upon the working qualities of the paper. It will only affect the appearance which I am sure we will agree is of minor importance when measured with the task that lies before everyone of us.

Avoid Changing Designs

● "While before you, I believe a word or two should be mentioned regarding designs. Bakers should not think of new designs or a lot of changes unless there is absolute necessity for such a move because when designs are changed it means new patterns and these patterns are made of zinc which is one of the vital metals now needed in war production. I don't mean to tell you that the industry will not change your design but the necessity should be quite pressing before such a move is made.

"I have been asked numerous times about ink. There is plenty of materials for inks generally speaking. However, there is a shortage of certain types for certain shades of ink. The baking industry, I am sure, will cooperate today by not asking to have every peculiar shade of ink. It is true that many of us have likes and dislikes as to the different shades of blues, reds and yellows but after all there will be no particular hardship to the baking industry if only 1 or 2 blues, reds, etc., shortly are available. You may expect this in the not too far distant future so it behooves you to not be too critical if you happen to be unable to have a special shade of ink duplicated.

"In conclusion, remember your product is vital to our existence and for sanitary reasons and the elimination of waste it should be wrapped in waxed paper."

Merrill Norwood Becomes TAPPI Member

● Merrill E. Norwood, paper mill superintendent, Columbia River Paper Mills, Vancouver, Washington, and chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, recently became a member of national TAPPI.

Spaulding Installs Steam Siren

● A World's Victory Steam Siren, as developed at the Hawley Pulp and Paper Company plant at Oregon City, Oregon, has been installed at Spaulding Pulp and Paper Company as the official air raid signal for Newberg.

Joint Meeting Emphasizes Materials Program

Annual Joint Meeting of the Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, hears three papers / / / Discusses availability of maintenance materials and operative supplies under present conditions / / / Well attended.

WAR created problems were the center of the discussions at the Annual Joint Meeting of the Pacific Coast Section of TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, held at the Portland Hotel, Portland, Oregon, June 5-6th, 1942.

The beneficial effects of large and small group discussions were apparent to a greater degree at this meeting than in the past. The war has multiplied the number of problems common to all mills and has accentuated the need for the pooling of ideas to facilitate adjustment to changing conditions and minimize the severity of such adjustments.

The symposium on availability of maintenance materials and operative supplies under present conditions held on Saturday afternoon, proved timely and helpful to the large number of men who attended. Also timely were the three papers given Saturday morning.

General chairman Robert T. Petrie and his committee members organized the meeting to provide an instructive and enjoyable time, co-operating with Edward P. Wood, vice chairman of the Pacific Section of TAPPI and George H. McGregor, first vice chairman of the Pacific Coast Division of the Superintendents, who planned the technical program.

A number of men who have taken an active part in the joint meetings in previous years were not present in Portland this year because they are serving in the various branches of the armed forces. They were not forgotten. Their participation in our fight to preserve the American way of life was frequently spoken of with pride, and the hope expressed that victory will soon permit them to return to the industry.

Friday's Program

● As is customary registration began at noon on Friday, June 5th. Registration chairman Robert M. True, Pacific Northwest representative of the General Dyestuff Corporation, found a large number of men already on hand when he opened his desk.

Mill visits, golf, bowling and arm chair pulp and paper making was the informal program for Friday afternoon. Those wishing to see the mills went to Oregon City, Vancouver, Washington, or Camas. The golfers played at the Columbia-Edgewater Country Club course where golf chairman John M. Fulton, manager of the Pacific Coast Supply Co., saw to it that all got off to a good start. The bowlers went to the Oregon Alleys where bowling chairman Joe Briody, manager of Industrial Chrome Plating supervised the championship matches.

The informal evening Mixup Party began at 9 p.m. and lasted to midnight. Dancing was interspersed with the "making of pulp and paper." A buffet supper was served and everybody had a good time.

Saturday's Program

● All Superintendents' meetings including the joint meeting with TAPPI must start with a breakfast to get everyone out for the business sessions. First tried in 1938 the "Wake 'Em Up Breakfast" has become an institution. Led by "The Super Getter Upper," Zina A. Wise ("Zinc"), vice president of the Griffith Rubber Mills and a past president of the Portland Breakfast Club.

On hand ahead of time to give his victims warning that 8:30 was the deadline and all late comers would be heavily fined, "Zinc" Wise opened up his program with lively music. After allowing all those who were late to get to their seats and to think they were going to escape punishment, toastmaster Wise summoned them to the head table to contribute to the treasury.

He introduced the officers of the two associations at the head table. Fred Shaneman, secretary-treasurer of the Pacific Section of TAPPI, was unable to attend, "Zinc" Wise reported, because of an Eastern business trip and regretted he couldn't make it. He read a letter from past secretary-treasurer of the Pacific Coast Division of the Superintendents, H. A. "Gob" Des Marais of San Francisco, Pacific Coast manager of the General Dyestuff Corporation, who wrote he was sorry he had to miss the meeting because of a minor illness. Following the introduction of R. T. Petrie, general chairman of the meeting and Pacific Coast representative of Black-Clawson, Shartle and Dilts, toastmaster "Zinc," announced the formation of a new organization. The superintendents and the technical men each have their organizations, he said, so the salesmen decided a third group



ROBERT T. PETRIE, Chairman of the Joint Meeting, hands over his registration fee to Registration Chairman ROBERT M. TRUE, while Miss ELSIE NEIKES checks him off. ERNEST E. KERTZ is next.

was necessary to complete the picture.

The new group will be known as the "International Brotherhood of Migratory Peddlers," and membership will be drawn from the ranks of the men who sell to the pulp and paper industry. Organized on June 3rd, the following Portland men were present at the first meeting: Fred Alsop of Van Waters & Rogers; Roy Carey of National Aniline; John Fulton of the Pacific Coast Supply Co.; Ernest Kertz of John W. Bolton & Sons; William C. Marshall of the Pacific Coast Supply Co.; R. T. Petrie of Black-Clawson, Shartle and Dilts; Harry H. Richmond of the Electric Steel Foundry Co.; Ray Smythe of Rice Barton Corp.; Robert M. True of General Dyestuff Corporation; and Zina A. Wise of the Griffith Rubber Mills.

Officers elected were: Zina A. Wise, international president; R. T. Petrie, international first vice president; John M. Fulton, international second vice president; Ray Smythe, international secretary; and H. H. Richmond, international treasurer.

The occasion of the announcement at the breakfast was the initiation into the order of the first honorary member, George H. McGregor, first vice chairman of the Superintendents and superintendent of the Longview Mill, Pulp Division Weyerhaeuser Timber Co. The initiation brought laughter from the 80 odd men present. Ray Smythe, conducting the initiation, delivered a speech as to the purposes of the new group and then handed George McGregor the accoutrements of the International Brotherhood of Migratory Peddlers, first a carnation, then a cigar, matches, a crying towel (paper), and a sharp pencil. "If there aren't enough to bring success," he advised,

"then try this" and handed him a bottle."

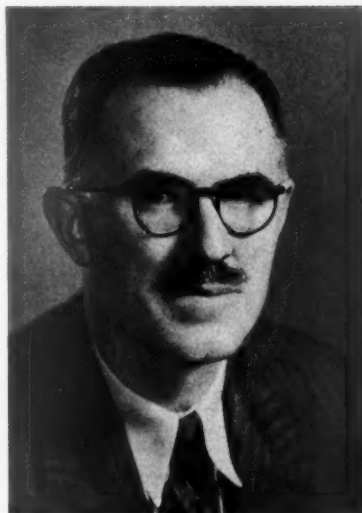
"Zinc" Wise instructed in the signs and password. First he gave him an alligator, then instructed that he cross his legs, arms, fingers and eyes, thereby assuming the position of the multiple cross. He had superintendent McGregor repeat the password after him, "I will do for our brothers as you know they will do you."

This bit of fun started the day right but it may give a misconception of the new organization's aims which are more serious and intended to serve a useful purpose. These aims will be announced shortly. Said President Wise, "We organized hurriedly, and in the near future we will announce additional plans which we feel will be for a more useful purpose. We do not want any of the sales representatives not now included in the group to feel that they were overlooked. Due to the short time in which we had to perfect our initial plans we simply did not have a chance to include all we wanted to have as members. We hope to greatly enlarge our scope and membership before the next meeting."

The Papers

● The morning business meeting was presided over by Edward P. Wood, vice chairman of the Pacific Section of TAPPI and technical director, Longview Mill, Pulp Division Weyerhaeuser Timber Co. Three papers were presented and discussed:

● "Important Factors in the Manufacture of Fast Hydrating Unbleached Sulphite Pulp from Western Hemlock," by Carl Sholdebrand, sulphite superintendent, Hawley Pulp & Paper Co., Oregon City, Ore.



EDWARD P. WOOD, Chairman, Pacific Section of TAPPI.

● "Vacuum Pump Problems in the Manufacture of Pulp and Paper," by Carleton L. Clark, Pulp and Paper Division, Nash Engineering Co., South Norwalk, Conn.

● "Outline of Slime Control," by Otto L. Hudrlik, northwest service manager, the Flox Company, Portland.

Extended discussion followed each paper. All three papers are published in this issue of **PACIFIC PULP & PAPER INDUSTRY**.

New TAPPI Officers

● Following the presentation of the papers the two associations held business meetings, the Pacific Section of TAPPI to elect new officers for 1942-1943.

The new chairman of the Pacific Section is Edward P. Wood, who served as vice chairman during the past year under chairman Carl E. Braun.



EIGHTY MEN answered the breakfast call at the Annual Joint Meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and the Pacific Section of TAPPI, Portland, June 5-6th.



DONALD G. FELTHOUS receiving the Pacific Section of TAPPI Shibley Award of \$50 for the best paper presented at a dinner meeting during 1941-1942, from **Carl E. Braun**, Retiring TAPPI Chairman. Mr. Felthous, an engineer with the Longview Mill, Pulp Division Weyerhaeuser Timber Co., gave a paper at the October 7, 1941, Dinner Meeting in Everett on "SO₂ Recovery From Sulphite Vomit Stacks."

Clarence A. Enghouse was elected vice chairman and will arrange the programs during the next TAPPI year, the six dinner meeting programs being his particular responsibility. Mr. Enghouse is technical supervisor and assistant to the manager of the West Linn, Oregon mill, Crown Willamette Paper Co., Division of Crown Zellerbach Corporation. A 1924 graduate in mechanical engineering from Oregon State College Mr. Enghouse went to work at West Linn as a paper tester shortly after finishing school.

In 1927 he became technical supervisor and on June 1st of this year assumed additional duties as assistant to the manager, Clarence E. Bruner. Mr. Enghouse has been active in the Crown Willamette Paper School, held each year at Camas from October to March, as vice principal since 1938 and as assistant professor of the first year class.

Robert M. True was elected secretary-treasurer to succeed Fred Shaneman, vice president of the Pennsylvania Salt Manufacturing Co., of Washington, Tacoma, who has served the past two and a half years. Mr. True, who lives in Portland, is Pacific Northwest representative for the General Dyestuff Corporation. He served as registration chairman for the Joint Meeting this year.

Following his graduation in 1925 from the University of Michigan with an M.S.E. degree in chemical engineering, Mr. True went to work in the wax reclaiming plant of the Kalamazoo Vegetable Parchment Company. Next came work in the laboratory of the Bryant Paper Company. Moving to Holvoke, Mass., he became chief chemist of the Chemical Paper Manufacturing Co. Later he became assistant superintendent of Crocker, McElwain

Company in the same city. Heading westward, Mr. True accepted the position of assistant superintendent for the Blandin Paper Company in Grand Rapids, Minnesota. In 1938 he resigned to become Northwest representative for the General Dyestuff Corporation, making his headquarters in Portland. He has been a member of TAPPI since 1928 and of the Superintendents since 1937.

The new members of the executive committee are Carl E. Braun, retiring chairman of the Pacific Section and vice president and mill manager of the Hawley Pulp & Paper Co., and E. G. "Sid" Drew of Drew & Hoffman, industrial heating, ventilating, drying and dust control engineers of Portland.

The Luncheon

● Presiding at the luncheon, Carl E. Braun, retiring chairman of the Pacific Section of TAPPI, introduced the men at the head table: Sam A. Salmonson, assistant superintendent, Soundview Pulp Com-

pany, Everett, and third vice chairman of the Pacific Coast Division of the Superintendents; A. S. Quinn, secretary-treasurer of the Superintendents and vice president of the Stebbins Engineering Corp., Seattle; Charles G. Frampton, superintendent, Fernstrom Paper Mills, Inc., Pomona, Calif., and second vice chairman of the Superintendents; George H. McGregor, superintendent, Longview Mill, Pulp Division Weyerhaeuser Timber Co., and first vice chairman of the Superintendents; Niles M. Anderson, mill manager, St. Regis Paper Co., Kraft Pulp Division, Tacoma, fourth vice president of the national Superintendents organization and past chairman of the Pacific Coast Division; Edward P. Wood, technical director, Longview Mill, Pulp Division Weyerhaeuser Timber Co., and newly elected chairman of the Pacific Section of TAPPI; Harry H. Richmond, chief engineer, Electric Steel Foundry Co., Portland, and a member of the Pacific Section executive committee; Fred A. Olmsted, technical supervisor, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas, and past chairman of the Pacific Section; Robert T. Petrie, Pacific Coast representative of Black-Clawson, Sharple, Dilts, Portland, general chairman of the 1942 Joint Meeting; and Clarence A. Enghouse, technical supervisor, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn, Oregon, and newly elected vice chairman of the Pacific Section.

Mr. Braun told the group that Merrill E. Norwood, chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and paper mill superintendent of the Colum-



PRESENTED PAPERS at the Joint Meeting. Left to right, **O. L. HUDRLIK**, The Flox Co., who gave an "Outline of Slime Control"; **CARL SHOLDEBRAND**, Sulphite Superintendent, Hawley Pulp & Paper Co., who spoke on "Important Factors In the Manufacture of Fast Hydrating Unbleached Sulphite Pulp From Western Hemlock"; and, **CARLETON L. CLARK**, Pulp & Paper Mill Division, Nash Engineering Co., who discussed, "Vacuum Pump Problems In the Manufacture of Pulp and Paper."

bia River Paper Mills, Vancouver, Washington, was unable to attend the meeting because of illness but had sent a message expressing his deep regret at his inability to be present. The Superintendents had advised Mr. Norwood how much they missed him and wished him a speedy recovery.

Two telegrams were read. Ralph A. Hayward, president of TAPPI, and of the Kalamazoo Vegetable Parchment Co., wired, "Extremely sorry I cannot attend your meeting. You have my best wishes for a very successful meeting. Please convey my congratulations to the winner of the Shibley Award. It is a real honor to achieve this distinction. Best wishes to all who attend your convention."

R. G. Macdonald, secretary of national TAPPI wired: "Intended to be with you but had to organize and hold a meeting in Chicago to assist Quartermaster Corps with its food packaging problems. Ralph Hayward and I wish you a real success in your meeting. Wish we could be with you. Please extend greetings to all present."

Mr. Braun introduced the new officers of the Pacific Section of TAPPI and then presented TAPPI's Shibley Award. This is given each year in the name of the late Kenneth Shibley, an ardent supporter of TAPPI and its aims, to the man presenting the best paper at one of the dinner meetings.

"Mr. Shibley was a great believer in the youth of TAPPI," said Mr. Braun, "and did much to encourage and assist the younger men in their chosen work. The principal object of TAPPI is to foster and promote the technical advancement in the pulp and paper industry by research and also to promote interest among the younger members who we expect will become leaders in the industry."

"This last year there were three contestants for the Shibley Award: Donald G. Felthous, engineer, Longview Mill, Pulp Division Weyerhaeuser Timber Co., whose paper, *So₂ Recovery from Sulphite Vomit Stacks*," was presented at the Tacoma dinner meeting on October 7th, 1941; C. A. Anderson, technical department, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas, who presented a paper entitled, *"The Influence of Wood Characteristics on Pulp Quality,"* at the Camas meeting on November 4, 1941; and, Francis W. Flynn, chemical engineer, technical department, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas, whose paper, *"Heat Transfer Characteristics of*

Indirect Heating for Sulphite Digesters," was given at the Port Angeles dinner meeting on April 7, 1942.

"The TAPPI officers and members wish to congratulate each of the men for their participation in the contest for the award," continued Mr. Braun. The rules of TAPPI are that the executive committee of the Pacific Section decide the winner upon the following three points:

"1. The amount of interest shown at the meetings where the paper is presented.

"2. Presentation of the paper.

"3. And more important, its technical value to the industry.

"I might state that the executive committee had an extremely difficult time in making the proper selection as all of the papers were good. It was necessary to call upon other members of TAPPI to assist in the judging, and I wish to announce that Mr. Donald G. Felthous's paper was finally selected as the best."

Accepting the certificate and the check for \$50 from Mr. Braun, Mr. Felthous expressed his thanks and also his appreciation for the opportunity offered by the Shibley Award contest. The money, he said, was going to go where all extra money ought to go these days, into War Bonds and Stamps.

Mr. Braun announced that the golf and bowling prizes would be waiting the winners at the registration desk after the luncheon as time did not permit their awarding at the luncheon.

Major Carson's Talk

● Major Joseph K. Carson, Corps of Engineers, United States Army, and former mayor of Portland for two terms, was introduced by Mr. Braun as the luncheon speaker. Major Carson's subject was, "The Nation's Manpower and Its Leader-



MERRILL E. NORWOOD, Chairman, Pacific Coast Division of the American Pulp & Paper Mill Superintendents Assn.

ship." Highlights from Major Carson's address:

"War is the natural state of mankind. We can see evidence of this truth everywhere if we will but look with understanding eyes. Americans deluded themselves about peace. Lulled themselves into a false sense of security as we all now know. This attitude prevented the development of organization for efficiency in war.

"What is manpower? When we talk of manpower we mean the productive capacity of all industry. We have prodigious manpower but it necessitates organization. The possibilities of successfully utilizing it in case of war were indicated by the efficiency of peacetime industrial organization. The American Legion urged the development of a plan for 'Universal Service.' It felt that in-



The MEN'S COMMITTEE for the Joint Meeting of Superintendents and TAPPI. Left to right, **ROBERT T. PETRIE**, General Chairman of the Convention, and Pacific Coast Representative of Black-Clawson, Shartle, Dilts; **JOHN M. FULTON**, Manager, Pacific Coast Supply Co.; **ROBERT M. TRUE**, Northwest Representative, General Dyestuff Corp.; and, **JOE BRIODY**, Manager, Industrial Chrome Plating Co., all of Portland, Oregon.



CLARENCE A. ENGHOUSE, Vice Chairman, Pacific Section of TAPPI.

dustury should be analyzed in advance so we would know how to use manpower. The American Legion realized that other countries were organizing for war. But this plan of preparedness was called war mongering and ignored by those who clung to the belief that peace could last in spite of world conditions.

"You wouldn't read the Sermon on the Mount to a cage of hungry Bengal tigers and expect to appease their hunger. The issues are simple. It is a question of the democratic form of government stemming from Christian life or whether pagan materialism is going to dominate the world.

"If Japan wins, Asiatics will attempt to exterminate the white race. The blood of brave men is on the heads of those who temporized with these things. It must not be too little and too late. We must speed

up the organization of our manpower to its maximum potential efficiency."

Major Carson's address deeply stirred the men present.

Dr. Joseph McCarthy of the Department of Chemistry, University of Washington, Seattle, announced that studies were under way at the University for working out methods of using bleach liquor for decontamination in case of mustard gas attacks. The mixture recommended by the Army is a concentration of 200 grams per liter while mill liquors run from 20 to 50 grams per liter. Sodium sulphide liquors are also being studied, Dr. McCarthy said, and results of the work will be ready to announce in a few weeks.

Mr. Braun congratulated general chairman R. T. Petrie and his committee heads for the able manner in which the meeting was planned.

Symposium on Available Materials

● In place of the usual Round Table Discussion of pulp and paper making problems, a timely symposium was held on "Availability of Maintenance Materials and Operative Supplies Under Present Conditions."

With George H. McGregor, first vice chairman of the Superintendents acting as chairman in place of Merrill E. Norwood, chairman, who was absent due to illness, and with Edward P. Wood, new chairman of the Pacific Section of TAPPI, assisting, the symposium got under way at 2 p. m. Saturday.

Materials were discussed as to availability, as to substitution and as to extension of their life through careful operation. Highlights only are presented here. The core of the remarks are recorded for the benefit of those who were unable to attend the meeting in Portland.

Copper and Brass—E. P. Hammond, American Brass Co., Seattle, stated that the pulp and paper industry is faced with elimination of copper and brass except in such absolutely essential items as four-drainer wires, for there isn't enough even for military purposes. In 1941 production was around 230,000 tons short of requirements, and it is estimated that the

supply this year will fall about 770,000 tons short of war needs. None is available for general industrial needs.

Mr. Hammond pointed out that the materials needs of this war are far greater than in the last war and cited an example. In World War I machine guns fired at 600 shots per minute. But in this war the average gun fires at 1,500 shots per minute. Fifteen hundred men can shoot as much metal in a given time in this war as 20,000 men could shoot in the last war. This example indicates the tremendous requirements of metals. There are two miles of copper wire in a bomber, 2,000,000 pounds of copper in a battleship.

A question was asked as to the use of steel in making cartridge and shell cases. Mr. Hammond replied that experiments were being carried on and might result in success, but that the reason brass has been used is due to its ability to expand quickly upon firing, thus sealing the breach mechanism to prevent the escape backward of the released gases. It is difficult to develop a steel that will expand with sufficient rapidity.

Woolen Felts—Harry H. Stilwell, Pacific Coast representative, Albany Felt Company, stated that stocks of wool suitable for felts are large and that at present the pulp and paper industry is assured of a supply of felts of the same quality as in the past. If present rulings on the use of wool are changed at some future date the situation will, of course, be altered. But little wool of clothing and blanket grades are used in paper making felts.

Leonard McMaster, Portland, Pacific Coast representative for the Orr Felt and Blanket Co., presented statistics on the woolen situation showing that stocks of wool suitable for felts were ample under present usage. Military requirements are not affecting wool felts as different grades of wool are used, but cautioned that any change in WPB rulings might alter the industry's position in relation to felts.

John M. Fulton, manager of the Pacific Coast Supply Company, representing F. C. Huyck & Sons, reported a similar opinion to those given by Mr. Stilwell and Mr. McMaster.

Dryer Felts—Mr. Fulton stated that the industry would probably not have any trouble in obtaining dryer felts. His concern, the Pacific Coast Supply Company, represents the California Cotton Mills. Mr. McMaster, representing the Asten-Hill Manufacturing Co., makers of asbestos dryer felts, said there is plenty of cotton but some deliveries may be slow



SPEAKERS' TABLE at the Saturday luncheon. Officers of the Pacific Coast Division of the Superintendents, left to right, S. A. SALMONSON, Third Vice Chairman; A. S. QUINN, Secretary-Treasurer; CHARLES G. FRAMPTON, Second Vice Chairman; GEORGE H. MCGREGOR, First Vice Chairman; NILES M. ANDERSON, Fourth Vice President of National Superintendents and past chairman of the Coast group.

Major JOSEPH K. CARSON, former Mayor of Portland, who spoke on "The Nation's Manpower and Its Leadership"; CARL E. BRAUN, Toastmaster and retiring chairman of the Pacific Section of TAPPI; EDWARD P. WOOD, Chairman of the Pacific Section; HARRY H. RICHMOND, member Pacific Section Executive Committee; FRED A. OLMSTED, past chairman of the Pacific Section; ROBERT T. PETRIE, General Chairman of the Joint Meeting; and CLARENCE A. ENGHOUSE, Vice Chairman of the Pacific Section.

as the bottleneck in the cotton industry is spindles for spinning the yarn. His company has an ample supply of asbestos.

Jack E. Johnson, representing the Morey Paper Mill Supply Co., stated that cotton is plentiful but that asbestos deliveries are slow at present.

Wires—Ben Natwick of the Appleton Wire Works, Inc., stated that the wire manufacturers association has informed the War Production Board of the necessity of fourdrinier wires to the industry and is doing everything within its power to insure a continued supply. The suggestion has been made that the alloy be changed to conserve copper and tin, and studies along this line are under way, but investigation to date has not revealed any definite steps that can be taken with satisfaction. Foreign wires of a few years ago had a lower copper content than American wires, he said. As yet the wires are of the same quality as before the war.

Ned Menzies, Pacific Coast representative of the W. S. Tyler Co., observed that the recent ruling of the WPB prohibiting wire makers to ship if the mill had more than four wires for a machine, was apt to work a hardship on mills operating high speed paper machines on the Pacific Coast, due to the distance from the wire producing plants. Carl Braun, Hawley Pulp & Paper Company, asked upon what basis was the four wire ruling predicated, but no one present could answer. He stated that unless changed, Coast mills running high speed machines would be in a dangerous position because of the length of time required to ship the wires. At present, he said, the ruling is national in scope and does not allow for differences in delivery time.

Carl F. Gaiser, purchasing agent, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Portland, asked if the manufacturers can hold wires for shipment to the mill upon telegraphic request. Mr. Natwick said that it is the aim of some wire manufacturers to keep one or two wires in stock for each machine they supply regularly. John M. Fulton of the Pacific Coast Supply Co., representing Eastwood-Nealley Corporation, stated that the Pacific Coast industry had been given insufficient consideration on fourdrinier wires, and that the wire makers are working to avoid any potential shutdowns due to lack of wires.

Roger E. Chase of R. E. Chase & Co., manufacturers representatives, Tacoma,

stated that as a general principle the WPB is more willing to listen to pleas by actual consumers of a product than to the requests of the manufacturers, and he urged the mills to make greater efforts to obtain higher priorities.

Gus Ostenson, paper mill superintendent, Crown Willamette Paper Co., Camas, told of experiments with Vinyon cloth for decker and washer covers. It gives some promise although to date it has not lasted as long as metal wire cloth.

Mr. Friend of the International Nickel Company stated that an A-1-K priority is now needed for monel and stainless wires from warehouse stocks, but an even higher priority is necessary to obtain them from a manufacturer.

Fred Riley, paper mill superintendent, Powell River Company, displayed a fourdrinier wire patch which had given good service. Photographs and a detailed description of its application appear elsewhere in this issue. Two other superintendents stated they have had satisfactory results with similar patches on 23-lb. bread wrap and on 9-lb. tissue.

Gerald F. Alcorn, plant engineer, Everett Mill, Pulp Division Weyerhaeuser Timber Co., remarked that the change in the pH of white water from 5 to 7 resulted in increased wire life. Mr. McGregor observed that the pH itself was of less importance than the cause of the pH.

Washer and decker cloth made of Saran plastic, manufactured by The Dow Chemical Co., was mentioned as a possible substitute for stainless and bronze but it is not yet available for testing.

Dyestuffs—Roy S. Carey, Pacific Northwest representative, National Aniline & Chemical Division, Allied Chemical & Dye, said that the latest word was that the paper industry would probably have sufficient quantities of most of the dyestuffs it needed although the dyestuff manufacturers were devoting a very large part of their facilities to war work. His own company is 65 per cent on war work. Most of the basic colors used in paper are plentiful. The paper industry consumes about 10 per cent of the dyestuffs made.

Certain colors used in making khakis and blues are short. This affects the makers of bond papers principally.

W. C. Marshall of the Pacific Coast Supply Co., representing Heller & Merz Department of the Calco Chemical Co., stated his views of the situation were similar.



ROBERT M. TRUE, Secretary-Treasurer, Pacific Section of TAPPI.

Paper Machine Maintenance—Ray Smythe, representing the Rice Barton Corporation of Worcester on the Pacific Coast, read the following data prepared by the company's engineering department:

"When we were first approached on the subject of preparing an article on the maintenance of paper machinery we gladly agreed to cooperate, believing that we knew some of the answers. Since that time, a few short weeks ago, the picture has undergone a rapid change.

"We can honestly say that there are few materials available for non-military uses. Today, the paper mills must depend to a large extent on the ingenuity and experience of its own personnel to keep the wheels turning and depend as little as possible on new material for maintenance work. Paper machinery is composed almost exclusively of critical materials. Even cast iron parts cannot be manufactured without a priority. Therefore, paper mills must look within their own organizations for brains and skill to keep their machinery running. Their present machinery must be cherished and tended with utmost care. This



The Ladies Committee for the Joint Meeting of the Superintendents and TAPPI. Left to right, Mrs. R. T. PETRIE, Chairman; Mrs. GUS OSTENSON, Mrs. JOHN M. FULTON, Mrs. CHARLES E. ACKLEY, Mrs. ROBERT M. TRUE, and Mrs. E. C. DREW.



GEORGE H. MCGREGOR, First Vice Chairman, Pacific Coast Superintendents.

is especially hard to do when every effort is being exerted to keep production at its peak.

"The following paragraphs may suggest a few thoughts, and we present them with the hope that they may be found useful.

"First, let us consider the simple but important item of doctor blades. For many years these blades have been an item which is constantly being reordered. These blades are bound to wear out, due to the nature of the service. Many mills have been in the habit of using bronze blades exclusively, and these are now practically impossible to obtain. Where bronze is necessary there really is no good substitute except such materials as Monel. However, a great many steel blades are now being used where conditions permit, and synthetic resin compositions are ex-

cellent in such locations as the fourdrinier and press. These are more easily obtainable than the nonferrous materials. A great deal of good can be done by spending some time and energy on the proper adjustment of doctors. The lowest possible pressure between the blade and the roll which would keep the roll clean is the proper pressure to use. This will not only lengthen the life of the blade but will keep the surface of the roll in better condition. A great many blades are worn out needlessly by using too high pressures or in some cases, using the improper angle between the roll face and the blade. Even before this emergency program, we were preaching the doctrine of keeping the doctors adjusted, as we know from experience that it is worthwhile.

"Another major item of maintenance is care of bearings, both anti-friction and sleeve type. When an anti-friction bearing fails the only simple remedy is to replace it. Therefore, each bearing should be subjected to periodic inspection and, most important of all, correct lubrication. Do not let a bearing fail.

"Sleeve bearings should be looked after perhaps more frequently than anti-friction bearings, inasmuch as a bearing failure in this case is likely to ruin a roll journal. In nearly every mill there are certain bearings which seem to give trouble, and in most cases it is not too difficult to determine the cause. Usually it is either improper selection of the bearing with regard to the load, or it is misalignment or some condition which is exerting a thrust load. These chronic troubles were formerly merely sources of annoyance. Now it is possible for a single bearing failure to shut down a paper mill.

"In many cases, especially at the wet end of a paper machine, Micarta or similar bearings have proved themselves to be very trouble free. These bearings are water lubricated and appear to be worthy of serious consideration, even in peace time.

"Fourdrinier wires are worth saving at any time, and it is doubly important at

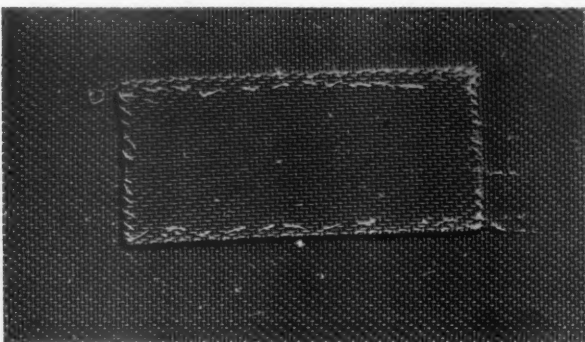


E. G. DREW, Executive Committee, Pacific Section of TAPPI.

this time to get the best possible life from each wire.

"The flat boxes are usually one of the greatest factors in wearing a wire; therefore, as low a vacuum as possible should be used to reduce the friction drag. A little experimenting may show that the average gain in water removal due to a high vacuum is slight. Some mills have already discovered this. One of the outstanding examples of this is shown on a pulp machine in which tests were made to determine at what point the water removal was greatest. It was discovered that no difference in water removal could be measured above one inch of vacuum. We, of course, realize that this does not apply to all paper machines, but we do believe that in some cases vacuums higher than necessary are being used.

"Suction box covers should be kept smooth and flat. The automatic guide



"OVER-THE-TOP" Fourdrinier Wire Patch as exhibited and described by FRED R. RILEY, Paper Mill Superintendent, Powell River Company, at the Joint Meeting in Portland. The photograph on the left shows the top side while the right hand picture shows the under side.

In this example the wire patched was a 65-50 mesh and the patch is 60-44 mesh. The sewing wire was .008 phosphor bronze. If the patch is the same mesh as the wire it will leave but a slight mark on the sheet, the edges only showing like a wire seam mark.

In applying the patch, Mr. Riley emphasized the necessity of embedding the sewing wire between the warp wires to prevent wear of the sewing wire. Two men applied the patch, one on top and one working underneath.

The fourdrinier wire from which this example was taken had run 7 days before the patch was applied. It then ran 18 days more on newsprint at 1230-feet-per-minute.

Although the patching of fourdrinier wires is not new the practice is increasing rapidly due to the scarcity of materials used in fourdrinier wires and the desire of machine operators to make them last as long as possible. This method, skillfully employed has proved highly successful.



FLASHES at the JOINT MEETING / / No. 1, JESSE R. LEWIS, Superintendent, Anacortes Pulp Co., Anacortes, Wash., who won the bowling tournament; No. 2, DON FELTHOUS, Engineer, Longview Mill, Pulp Division Weyerhaeuser Timber Co., winner of TAPPI'S Shibley Award, talking with V. L. TIPKA, Research Engineer, Hawley Pulp & Paper Co.; No. 3, CHARLES G. FRAMPTON, Superintendent, Fernstrom Paper Mills, Pomona, Calif., Second Vice Chairman of the Pacific Coast Division of the Superintendents taking part in the bowling tournament.

No. 4, FRED A. OLMSTED, Technical Supervisor, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas, and past Chairman of the Pacific Section of TAPPI, talking with CARL E. BRAUN, Vice President and Mill Manager, Hawley Pulp & Paper Co., and retiring Chairman of the Pacific Section; No. 5, GEORGE G. GUILD, Huntington Rubber Mills, Seattle, and JACK E. JOHNSON, Pacific Coast Representative Appleton Woolen Mills, Morey Paper Mill Supply Co., and Fitchburg Screen Plate Co.; No. 6, JACK JOHNSON in action.

No. 7, JOE SCHEUERMAN, Western Manager, Cameron Machine Co., Chicago, about to wind up; No. 8, Major JOSEPH K. CARSON, Jr., Corps of Engineers, United States Army and former Mayor of Portland, who spoke at the men's luncheon on "The Nation's Manpower and Its Leadership"; No. 9, JOE BRIDY, Manager of Industrial Chrome Plating Co., Portland, and Chairman of the Bowling Tournament; No. 10, ROSS BLACK, Superintendent of Maintenance, and FRED R. RILEY, Paper Mill Superintendent, Powell River Company, Powell River, B. C.



CARL E. BRAUN, Retiring Chairman, Pacific Section of TAPPI.

must be in good working condition to keep a wire central; and the palm pressure must be light to prevent damage to the edge of the wire.

"Suction rolls should be watched very carefully. They should be inspected often—oftener than ever before. Inspect the packing strips and all of the bearings; keep the roll clean so as to avoid having the inside of the shell roughened. A suction roll contains many critical materials, in addition to the hours of labor necessary to make these parts.

"Doctors on return wire rolls are important and should be used wherever stock tends to collect, as this condition frequently causes ridges in wires. How-

ever, a doctor which causes a roll to lag behind the speed of the wire is almost as much of a hazard. In some cases, it is desirable to put a small belt drive on a wire roll in order to use a doctor and to keep the roll running at its proper speed.

"In a few cases, dandy rolls may be damaging wires, and it is always well to keep the space directly underneath the dandy free from table rolls or suction box covers, inasmuch as this may cause an impact at every revolution of the roll. This is particularly true on light weight papers.

"The International Nickel Company has recently published in one of their advertisements a "Do and Don't" List which applies so perfectly to save-all pans and other nonferrous parts at the wet end of the paper machine that we take the liberty of repeating them here.

Do . . .

"1. When using dissimilar metals together make certain they form a safe galvanic couple.

(a) Under most conditions combinations of Monel, Bronze, Brass, and Copper are safe.

(b) Usually small areas of Monel or Bronze may be combined with large areas of steel or cast iron, such as Monel bolts in steel machine rails or Monel pump shafts with iron or alloy iron impellers."

Don't . . .

"1. Never combine metals or alloys whose composition and relative corrosion resistance are not known to you.

2. Do not combine large areas of Monel, Bronze, Brass or Copper with small areas of steel, such as steel rivets in Monel screen plates, or steel nails in Monel sheet.

3. Do not weld corrosion resisting al-

loys with welding rods other than recommended for their use."

"The equipment for driving the machine is subject to a great deal of wear. If the drive is properly proportioned in the first place, its life should be very long. About all that can be said in regard to driving equipment is that it should not be overloaded. This condition is very likely to exist on machines which have been rebuilt and where additional dryers or similar equipment have been added without changing the drives.

"There are, of course, unavoidable breakdowns, but each of these has a definite cause and its correction is a separate engineering problem in itself. About all that can be said at present is that great care should be taken in starting a paper machine because it is at such times that many failures occur, because of heavy starting loads.

"It should be remembered that driving equipment today is particularly hard to obtain. Every gear cutter of any consequence in this country is overloaded with work. The same applies to all builders of clutches, antifriction bearings, and even "V" belt drives.

"We suggest to all mills that they assign as many men as necessary to inspect machinery throughout their mills and that they do this at all times. Have good men—men who know their jobs—and when they report signs of trouble take care of the trouble item at once and don't wait until it breaks. We know from experience that this has saved some mills hours of shutdown time—and such hours would be many more today for replacements of certain parts are not available.

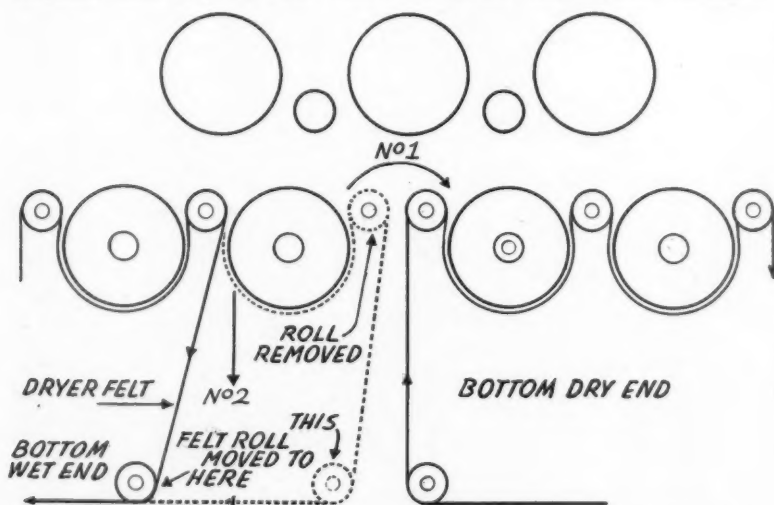
"We should like to repeat that the Maintenance Department of any mill is not to be considered as a necessary evil, but rather a major and important item of operation. During the national emergency the Maintenance Departments will largely take the place of the machine builders.

"We are sure that the paper mills do appreciate the position of the paper machine builders. In the first place, we cannot secure or ship critical materials except under the rules and regulations; and in the second place, we have a machine shop and a foundry very necessary for the doing of war work.

"We do have available, however, our staff of engineers who are on call at any time that the paper mills need them, and our engineers, no doubt, can be very helpful to the mills in finding answers to their many problems. Do do not hesitate to call upon us."

Bearings—Elmer Isopera, SKF Industries, Portland, said his statement would assume that all bearing manufacturers are in the same fix, they are swamped with war work. Two years ago all SKF bearings were made in one plant. Bearings are now being made in Plant No. 4.

All war equipment takes bearings. Planes require hundreds of bearings. Bearing makers are taking care of war needs first but are endeavoring to keep essential civilian industry rolling, too. Aspect a bit more cheerful today than a few months ago. One problem not generally recognized by industry is that bearing sizes are produced in groups. Each group of sizes is made on a steady run of from 4 to 6 months. If, during that period the stock of any bearing not being made runs out replacement must await the manufacture of the group that size falls within. Special bearings are being eliminated and production concentrated upon standard sizes and designs. Unfortunately the pulp and paper industry



DRYER FELT HOOKUP that reduces lost time and lengthens the life of the felts. Described at the Joint Meeting by FRED R. RILEY, Paper Mill Superintendent and ROSS BLACK, Superintendent of Maintenance, Powell River Co. The idea comes from an Eastern Canadian paper mill. Sketch by Mr. Black.

With the old arrangement (dotted line) occasional wet wads would come over the wet end dryers and jump over to the dry end felt (No. 1). By shortening the wet end felt any wads coming over drop down into pit (No. 2). This arrangement partially eliminates lost time in stopping dryers to spear paper off cylinders when sheet breaks.

By preventing wet wads from going over to the dry end felt the life of the latter has been increased from 10 to 15%.

uses many special bearings. If these fail the industry will have to substitute other sizes hence should be very careful with maintenance.

Don't put too much grease in a bearing, Mr. Isopera warned. Grease should touch the lowest ball. He was asked about the possibility of renewing ball bearings. In his answer Mr. Isopera said that it worked out pretty well but the success of the renewed bearing depended upon how well the work was done. However, a renewed bearing should not be expected to stand sudden heavy loads.

Dewey Rigg, plant engineer, Longview Fibre Co., stated that ball bearings can be successfully renewed if the outer race is not scored and that he had had good luck with renewed bearings.

Stainless Steel—Harry H. Richmond, chief engineer, Electric Steel Foundry Co., Portland, commented that the picture changes rapidly. We must differentiate between availability of material and availability of manufactured product. There is a great difference. In considering stainless steel we must take into account chromium, nickel, molybdenum, manganese. Chromium comes from Turkey, Asia, New Caledonia, Cuba and South Africa and the Philippines. Transportation is a big problem.

Stocks looked ample a year or so ago, but now it appears they will be gone by the end of the summer due to accelerated use.

PORTLAND GOLFERS—

For the third time, JACK JOHNSON, St. Regis Paper Co., Kraft Pulp Division, Tacoma, won the Ohio Knife Trophy with the Low Gross in Class A (left in No. 1). Next to him is HUGO TRYGG of the same mill; ZINA A. WISE, Breakfast Toastmaster and Vice President of the Griffith Rubber Mills; GEORGE H. MCGREGOR, Superintendent, Longview Mill, Pulp Division Weyerhaeuser Timber Co., and First Vice Chairman of the Pacific Coast Division of the Superintendents, who had the first Low Net in Class A.

No. 2, left to right, FRED ALSOP, Van Waters & Rogers, Portland; W. R. BARBER, Technical Director, Crown Zellerbach Corp., Camas, who had the Second Low Net in Class B; and, EMMET J. CAREY, Resident Manager, Columbia River Paper Mills, Vancouver, Wash.

No. 3, left to right, J. A. WILCOX, Process Engineer, Longview Fibre Co.; JACK WILCOX, Electric Steel Foundry Co., Portland, who had the First Low Net in Class B; E. O. ERICSSON, Chief Chemist, Puget Sound Pulp & Timber Co., Bellingham; and, BOB WILCOX, Longview Fibre Co., who had the Third Low Net in Class B.

No. 4, left to right, JOHN M. FULTON, Manager, Pacific Coast Supply Co., Portland, and Chairman of the Golf Tournament; FOSS LEWIS, Northwest Manager, Simonds Saw & Steel Co., Portland; CARL FAHLSTROM, Assistant Manager, Longview Fibre Co., who had Second Low in Class A; WALTER BAUMANN, Pennsylvania Salt Manufacturing Co. of Washington, Tacoma; and, LAWRENCE K. SMITH, Manager, Pacific Pulp & Paper Industry, Seattle.





CHARLES G. FRAMPTON, Second Vice Chairman, Pacific Coast Superintendents.

Other aspects of the stainless situation include the rolling mills which cannot make small orders any more. Minimum order now is 6,000 lbs., which freezes out the sulphite mills.

On priority ratings the pulp and paper industry can do a better job than has been done to date in making its usefulness known to those in authority. Suppliers are cooperating but the consumers must ask again and again for what they actually need to keep production going. Remember that the squeaking bearing gets the grease.

The second step in applying for high enough priorities to obtain stainless steel is to state what has been done to try and use substitutes. The next step is to identify stocks available for release. Even the mills' own stocks of stainless welding rod are frozen. By identifying known stocks available for use the WPB work is simplified. They know then that what is



FRED C. SHANEMAN, Retiring Secretary-Treasurer of TAPPI.

being asked for is already on hand and does not have to be manufactured.

In closing Mr. Richmond asked if anyone had thought of silver as a substitute for tin. Experiments show that it might not be a bad substitute for tin.

Rubber—Zina A. Wise, vice president Griffith Rubber Mills, Portland, stated that there has been little change in the rubber situation during the past few months as far as the paper mills are concerned. Limitations are expected to be placed on the thickness of roll covers. This will cause trouble in some mills in conforming to the thickness requirements. Press rolls are limited to 3/4-inch thickness. Mill adjustments will be required to handle this thinner cover.

As far as rubber is concerned the pulp and paper mill business has been nearly normal and it is expected to continue to be, except for the thinner coverings.

Knives—Foss Lewis, Pacific Northwest manager, Simonds Saw & Steel Co., Portland. Alloy steel knives are limited to present stocks of steel as far as Simonds Saw & Steel are concerned. May go back to plain carbon steel as it is difficult to convince Washington that pulp and paper mills are essential and need higher priorities.

No shortage expected on grinding wheels. Life of knives can be materially increased by care. Simonds and other knife makers are willing to give suggestions to all who ask for them.

Ray Smythe said one company, Hepenstall, is manufacturing a knife equal in quality to alloy knives without using strategic materials. Alloy knives as now employed appear to be out for the duration.

Instruments—Owen Abbott, The Bristol Co., Seattle. Instruments not requiring stainless steel or other strategic metals or jeweled bearings, are still available on an A-10 priority rating. All others must have a much higher rating.

Electrical Equipment—Lyle G. Fear, district manager, Westinghouse Electric & Mfg. Co., Portland, stated new equipment is very difficult to obtain and present electrical equipment must be kept in the best of condition. It is normally long lived and hence is apt to be neglected. Inspections should be made more frequently to determine condition. Look out for moisture and acids. Keep bearings well lubricated. Maintain your equipment in good condition and it will carry you through the emergency.

R. V. Maier of General Electric Company, Portland, announced that his company has just published a booklet on maintenance of electrical equipment in the pulp and paper industry which is available upon request.

Carl Braun, vice president and mill manager, Hawley Pulp & Paper Company, urged the mills to work with the WPB through their own conservation coordinators who should be concentrating upon the use of substitutes, salvaging and conservation of critical materials. By exhausting all possibilities within the mill before applying for essential repair materials you strengthen your application when you do have to apply, he said.

Time limited further discussion, and chairman McGregor thanked all who had participated together with those who came prepared to discuss other subjects which were not taken up.

Saturday Evening

● Toastmaster at the banquet on Saturday evening was Niles M. Anderson, fourth vice president of the national Superintendents and past chairman of the Pacific Coast Division. Seated at the speakers' table with him were: Robert T. Petrie, general chairman of the joint meeting; Edward P. Wood, chairman of the Pacific Section of TAPPI; Mrs. Niles M. Anderson; Carl E. Braun, retiring chairman of the Pacific Section; Mrs. George H. McGregor; George H. McGregor, first vice chairman of the Pacific Coast Division of the Superintendents; U. Grant Farmer, chairman, Papermakers and Associates of Southern California; Charles G. Frampton, second vice chairman, Pacific Coast Division of the Superintendents; Mrs. R. T. Petrie and Mrs. Carl E. Braun.

Mr. Anderson announced that Merrill E. Norwood, chairman of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, had been informed of the meeting's regret that he could not attend because of illness and that everyone wished him a speedy recovery.

He introduced Joseph Sampietro, musical director of radio station KOIN, Portland, who took over the entertainment. His vocal ensemble presented a "Cavalcade in Music and Song," which made a tremendous hit, the crowd calling for more and more. Dancing concluded the evening and the 1942 Joint Meeting of the Superintendents and TAPPI.

Prizes

● In the golf tournament the Class A winners were as follows: Jack Johnston, St. Regis Paper Co., Kraft Pulp Division, Tacoma, Low Gross; George H. McGregor, Longview Mill, Pulp Division Weyerhaeuser Timber Co., First Low Net; Carl Fahlstrom, Longview Fibre Co., Second Low Net; J. F. Smith, Great Western Division, The Dow Chemical Co., San Francisco, Third Low Net.

In Class B the winners were: Walter A. Salmonson, Simonds Worden White, Low Gross; Jack Wilcox, Electric Steel Foundry Co., First Low Net; W. R. Barber, Crown Zellerbach Corp., Second Low Net; R. A. Wilcox, Longview Fibre Co., Third Low Net; Otto Hudrlik, High Gross.

Don L. Shirley, Link-Belt Co., Portland, had the longest Drive on No. 1; Carl Fahlstrom, Longview Fibre Co., the Longest Drive on No. 18; and W. R. Barber, Crown Zel-

lerbach Corp., Closest to the Pin on No. 8. Special awards for Birdies went to Fred Alsop, Don Shirley and Jack Johnston.

First prize in the bowling tournament was won by Jesse R. Lewis, Anacortes Pulp Company, with 671. Second prize went to Charles G. Frampton, Fernstrom Paper Mills, Inc., with 601.

The committee in charge of the Joint Meeting expressed appreciation for the cooperation of the following who contributed prizes: Harry Richmond of Electric Steel Foundry Co.; Bill Williamson of Shuler & Benninghofen; Don Shirley of Link-Belt; Foss Lewis of Simonds Saw & Steel; Frank Wilder of H. Waterbury & Sons; Fred Huber of California Ink; C. J. McAllister of Simonds Worden White.

Fred Alsop of Van Waters & Rogers; Joe Scheuerman of Cameron Machine Company; W. G. Ballantyne of Western Gear Works; Roy Carey of National Aniline.

Joe Briody of Industrial Chrome Plating Co., contributed the first prize trophy for bowling while Ray Smythe contributed the second prize, \$5 in War Stamps.

The Committees

● The deepest appreciation for the successful Joint Meeting of the two associations was expressed by the officers to the committees who handled all the arrangements.

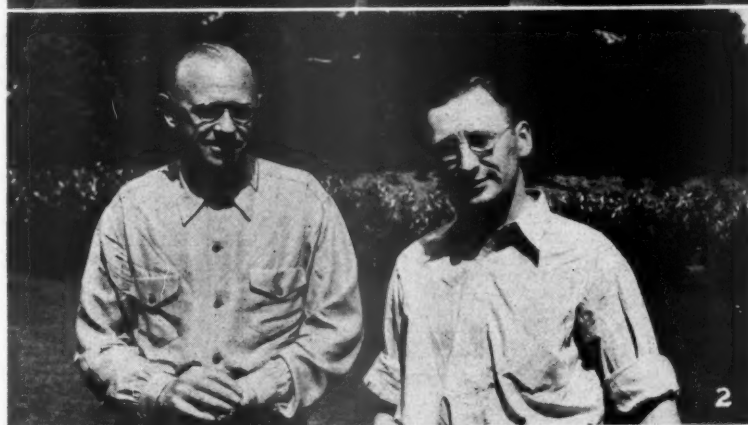
MORE GOLFERS—

In No. 1, U. GRANT FARMER, Superintendent, Fibreboard Products Inc., Vernon Division, Los Angeles; ED. GARRISON, American Cyanamid & Chemical Co., Seattle; W. C. MARSHALL, Pacific Coast Supply Co., Portland; and W. H. WILLIAMSON, Shuler & Benninghofen, Portland.

No. 2, J. F. SMITH, Sales Manager, Great Western Division, The Dow Chemical Co., San Francisco, who had the Third Low Net in Class A; and OTTO HUDRLIK, Northwest Service Manager, The Flox Co., Portland, who had the High Gross in Class B.

No. 3, BOYD BUSTARD, Golf Instructor, Columbia-Edgewater Country Club, Portland; W. G. SWENSON, a visitor from Boise, Idaho; and DON L. SHIRLEY, Manager, Link-Belt Co., Portland.

No. 4, left to right, ARTHUR E. DUKE, Master Mechanic, Soundview Pulp Co., Everett; C. J. McALLISTER, Simonds Worden White Co., Portland; WALTER SALMONSON, Simonds Worden White Co., Seattle, who had the Low Gross in Class B; FRED A. OLMSTED, Technical Supervisor, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; and HARLAN SCOTT, Editor, Pacific Pulp & Paper Industry, Seattle.





SAM A. SALMONSON, Third Vice Chairman, Pacific Coast Superintendents.

Robert T. Petrie, Pacific Coast Representative of the Black-Clawson Company and its divisions, Shartle Bros. Machine Co. and the Dilts Machine Works, served as general chairman.

Assisting him were, John M. Fulton, manager of the Pacific Coast Supply Co.; Robert M. True, northwest representative, General Dye-stuff Corp., and Joe Briody, manager, Industrial Chrome Plating Co.

The Ladies Committee was headed by Mrs. R. T. Petrie as chairman. Assisting her were: Mrs. John M. Fulton, Mrs. Robert M. True, Mrs. E. G. Drew, Mrs. Gus Ostenson, and Mrs. Charles Ackley.

Ladies Program

● The many ladies attending the Joint Meeting in Portland found an interesting program arranged for them by the committee. Besides the dance Friday evening and the banquet and dance Saturday evening, a special luncheon was held for them at the Aero Club on Saturday. The afternoon was devoted to bridge and tea was served later.

Registration

● The following registered at the 1942 Joint Meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and the Pacific Section of TAPPI, held June 5-6th, at the Portland Hotel, Portland, Ore.

O. C. Abbott, Bristol Company, Seattle; Mr. and Mrs. C. E. Ackley, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Lebanon, Ore.; Mr. and Mrs. F. E. Alsop, Van Waters & Rogers, Portland; Mr. and Mrs. G. F. Alcorn, Pulp Division, Weyerhaeuser Timber Co., Everett; C. A. Anderson, Crown Willamette Paper Co., Division of Crown Zellerbach Corp.; Camas; Mr.

and Mrs. Niles Anderson, St. Regis Paper Co., Kraft Pulp Division, Tacoma; Douglas B. Armstrong, Oregon Pulp & Paper Co., Salem; Mr. and Mrs. Fred Armbruster, Great Western Division, The Dow Chemical Co., Seattle.

W. R. Barber, Crown Zellerbach Corp., Camas; Mr. and Mrs. C. M. Barr, Marshall & Barr, Seattle; E. R. Barrett, A. O. Smith Corporation, Seattle; W. R. Baumann, Pennsylvania Salt Mfg. Co. of Washington, Tacoma; Mr. and Mrs. C. B. Baxter, Tacoma Plumbing Supply Co., Tacoma; Mr. and Mrs. H. E. Becker, Soundview Pulp Co., Everett; R. M. Black, Powell River Company, Ltd., Powell River, B. C.; Mr. and Mrs. L. Blackerby, Pacific Pulp & Paper Industry, Portland.

Mr. and Mrs. Carl E. Braun, Hawley Pulp & Paper Co., Oregon City; J. F. Brinkley, Pacific Coast Association of Pulp & Paper Manufacturers, Seattle; Mr. and Mrs. Joe Briody, Industrial Chrome Plating Co., Portland; Martin Breuer, E. I. Du Pont de Nemours & Co., San Francisco; Mr. and Mrs. A. E. Brownhill, Simonds Saw & Steel Co., Portland; A. M. Cadigan, St. Regis Paper Co., Kraft Pulp Division, Tacoma; Mr. and Mrs. Roy Carey, National Aniline Division Allied Chemical & Dye Corp., Portland; C. W. Callaghan, Flox Company, Tacoma; Major Joseph K. Carson, Portland.

H. V. Charnell, Rayonier Incorporated, Port Angeles; R. E. Chase, R. E. Chase & Co., Tacoma; C. L. Clark, Nash Engineering Co., South Norwalk, Conn.; Mr. and Mrs. S. Collier, Puget Sound Pulp & Timber Co., Bellingham; J. V. B. Cox, Hercules Powder Co., Portland; Mrs. Ralph Dindot; Mr. and Mrs. E. G. Drew, Drew & Hoffman, Portland; Mr. and Mrs. A. E. Duke, Soundview Pulp Co., Portland; Mr. and Mrs. A. C. Duncan, Hercules Powder Co., Portland.

Clarence Enghouse, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn, Ore.; V. Engbeck; Mr. and Mrs. E. O. Ericsson, Puget Sound Pulp & Timber Co., Bellingham; Mr. and Mrs. Carl Fahlstrom, Longview Fibre Company, Longview; U. Grant Farmer, Fibreboard Products Inc., Los Angeles; L. G. Fear, Westinghouse Electric & Mfg. Co., Portland; D. G. Felt-hous, Pulp Division, Weyerhaeuser Timber Co., Longview; L. E. Fitzgerald, Hercules Powder Co., Kalamazoo, Mich.; F. W. Flynn, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas.

Charles G. Frampton, Fernstrom Paper Mills, Pomona, Calif.; Mrs. Frank Frampton, Pomona, Calif.; W. L. Friend, International Nickel Co.; Mr. and Mrs. J. M. Fulton, Pacific Coast Supply Co., Portland; G. H. Gallaway, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mr. and Mrs. I. R. Gard, Merrick Scale Manufacturing Co., Seattle; J. E. Garrison, American Cyanamid & Chemical Co., Seattle; W. R. Gibson, Northwest Filter Co., Seattle; Miss Anita Gilks; E. F. Gick.

Mr. and Mrs. Joe Gorman, St. Helens Pulp & Paper Co., St. Helens, Ore.; Mr. and Mrs. Alfred Graef, Pulp Division, Weyerhaeuser Timber Co., Longview; T. H. Grant, Columbia River Paper Mills, Vancouver, Wash.; George G. Guild, Huntington Rubber Mills, Seattle; Mr. and Mrs. Kenneth B. Hall, Hesse-Ersted Iron Works, Portland; Mrs. Jack Hanny, Camas; Mr. and Mrs. J. A. Harris, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn, Ore.

Mr. and Mrs. Jan Haugerod, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn, Ore.; Svarre Hazelquist, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. Clyde Helsby, Hawley Pulp & Paper Co., Oregon City; Mr. and Mrs. K. W. Hendricks, Van Waters & Rogers, Portland; H. R. Heuer, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. H. F. Hoehne, Longview Fibre Co., Longview; W. F. Holzer, Central Technical Dept., Crown Zellerbach Corp., Camas; Mr. and Mrs. W. P. Hubbard, Longview; O. L. Hudrlik, Flox Company, Portland; K. A. Hultan, Seattle.

J. B. Hyde, Central Technical Dept., Crown Zellerbach Corp., Camas; Dr. and Mrs. A. D. Inches, Portland; Mr. and Mrs. Jack E. Johnson, Appleton Woolen Mills, Portland; L. M. Johnson, Pulp Division, Weyerhaeuser Timber Co., Everett; Mr. and Mrs. W. A. Kelly, Waterbury Felt Co., Portland; Mr. and Mrs. E. E. Kertz, John W. Bolton & Sons, Portland; F. B. Lewis, Simonds Saw & Steel Co., Portland; J. R. Lewis, Anacortes Pulp Co., Anacortes, Wash.; Mr. and Mrs. E. E. Logsdon, Hawley Pulp & Paper Co., Oregon City; R. V. Maier, General Electric Co., Portland.

Mr. and Mrs. W. C. Marshall, Pacific Coast Supply Co., Portland; Mr. and Mrs. R. W. Martig, Brown Instrument Co., Portland; Mr. and Mrs. C. J. McAllister, Simonds Worden White Co., Portland; Mr. and Mrs. V. D. McCann, Longview; Joseph L. McCarthy, University of Washington, Seattle; Mr. and Mrs. G. H. McGregor, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. Leonard McMaster, Asten-Hill Manufacturing Co., Portland; Miss Eileen Meagher; Joe McQuaid, Electric Steel Foundry Co., Portland; H. N. Miller, Westinghouse Electric & Mfg. Co., Portland; K. M. Milligan, Northwest Lead Co., Seattle; Walter Mitchell, Valsetz, Ore.

Mr. and Mrs. J. H. Moak, Soundview Pulp Co., Everett; T. E. Moffitt, Hooker Electrochemical Co., Tacoma; C. W. Morden, Morden Machines Co., Portland; Mr. and Mrs. D. C. Morris, James Brinkley Co., Seattle; Mr. and Mrs. A.



A. S. QUINN, Secretary-Treasurer, Pacific Coast Superintendents.

G. Natwick, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; B. E. Natwick, Appleton Wire Works, Inc., Portland; Miss Phyllis Natwick, Camas; Mr. and Mrs. Austin Nickels, Hawley Pulp & Paper Co., Oregon City; Miss Elsie Neikes, Portland; Mr. and Mrs. J. G. O'Brien, Soundview Pulp Co., Everett.

F. A. Olmsted, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; O. J. Olson, Soundview Pulp Co., Everett; Jim Osborne, General Chemical Co., Portland; Mr. and Mrs. Gus Ostenson, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas; Mrs. M. J. Otis, West Linn, Ore.; H. T. Peterson, Pulp Division, Weyerhaeuser Timber Co., Longview; Mr. and Mrs. R. T. Petrie, Black-Clawson Co., Portland; Mr. and Mrs. R. K. Pratt, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., West Linn, Ore.; A. S. Quinn, Stebbins Engineering Corp., Seattle; C. A. Ramstad, Soundview Pulp Co., Everett.

Mr. and Mrs. Ralph Reed, Spaulding Pulp & Paper Co., Newberg, Ore.; Mr. and Mrs. Reppe, Hercules Powder Co., Portland; Mr. and Mrs. H. H. Richmond, Electric Steel Foundry, Portland; W. D. Rigg, Longview Fibre Co., Longview; F. R. Riley, Powell River Co., Powell River, B. C.; G. D. Ross, St. Regis Paper Co., Kraft Pulp Division, Tacoma.

S. A. Salmonson, Soundview Pulp Co., Everett; Mr. and Mrs. W. A. Salmonson, Simonds Worden White Co., Seattle; J. Scheuerman, Cameron Machine Co., Chicago; Mr. and Mr. John Shuh, Longview Fibre Co., Longview; Harlan Scott, Pacific Pulp & Paper Industry, Seattle; C. M. Server, Philadelphia Felt Co., Portland; L. R. Sheldahl, Eagle Metals Co., Seattle; Mr. and Mrs. D. L. Shirley, Link-Belt Co., Portland; Anton Siebers, Longview Fibre Co., Longview; Miss Helen Siebers, Longview.

C. Sholdebrand, Hawley Pulp & Paper Co., Oregon City; Mr. and Mrs. J. F. Smith, Great Western Division, The Dow Chemical Co., San Francisco; L. K. Smith, Pacific Pulp & Paper Industry, Seattle; Ray Smythe, Rice Barton Corporation, Portland; Mrs. Fred Stevey; H. H. Stilwell, Albany Felt Co., Belfair, Wash.; E. H. Tidland, Pacific Coast Supply Co., Portland; V. L. Tipka, Hawley Pulp & Paper Co., Oregon City.

Mr. and Mrs. R. M. True, General Dyestuff Corp., Portland; Mr. and Mrs. James J. Turek, Jr., Stein-Hall Mfg. Co., Portland; R. Waldo, National Aniline Division Allied Chemical & Dye Corp., San Francisco; Mr. and Mrs. K. G. Urfer, Hawley Pulp & Paper Co., Oregon City; Mr. and Mrs. A. S. Viger, Rayonier Incorporated, Shelton, Wash.; Harold C. Wall, Longview Fibre Co., Longview; Mr. and Mrs. T. J. Waltmon, Ohio Knife Co., Portland; Mrs. T. M. Waltmon.

Dave Watson, Longview Fibre Co., Longview; Mr. and Mrs. L. H. Wear, Taylor Instrument Companies, Portland; Mr. and Mrs. J. M. Wilcox, Electric Steel Foundry, Portland; Mr. and Mrs. J. A. Wilcox, Longview Fibre Co., Longview; R. E. Wilcox, Longview Fibre Co., Longview; F. P. Wilder, H. Waterbury & Sons Co., Portland; Mr. and Mrs. W. H. Williamson, Shuler & Benninghofen, Portland; Z. A. Wise, Griffith Rubber Mills, Portland; James A. Wilson, Hawley Pulp & Paper Co., Oregon City; E. P. Wood, Pulp Division, Weyerhaeuser Timber Co., Longview; E. H. Woodruff, Rayonier Incorporated, Shelton, Wash.

Jack Johnson to Represent Fitchburg Screen Plate

● Jack E. Johnson has been appointed Pacific Coast representative for the Fitchburg Screen Plate Company of Fitchburg, Mass., according to an announcement by E. H. Hall, president of the company. Mr. Johnson, who lives at Holly Acres, Oswego, Oregon, succeeds Kenneth B. Hall of Portland, who now heads the Hesse-Ersted Iron Works of Portland, makers of pulp and paper mill machinery.

After 40 years in paper making Jack Johnson took over the Morey Paper Mill Supply Company of Fitchburg dryer felt account in 1940. Later that same year he became representative for the Appleton Woolen Mills of Appleton, Wisconsin, and he has since regularly called upon the Pacific Coast mills.

Jack Johnson got his start in paper-making in 1896 with Tileston & Hollingsworth at Mattapan, Mass. About six years later he moved to Winslow, Maine, to work for the Hollingsworth and Whitney Company. He remained with them for 17 years, becoming boss machine tender.

In 1920 he was hired by the Crown Willamette Paper Company as assistant superintendent in charge of the machine room at Camas. Seven years later Mr. Johnson accepted the position of production superintendent of the Hawley Pulp & Paper Company at Oregon City, Ore.

gon. During the three years he was at the Hawley mill the 234-inch high speed news machine, No. 4, was placed in operation.

He returned to Camas and worked there until 1932 when the Western Coöperage Company acquired control of the Hawley mill. Mr. Johnson became general superintendent at Oregon City under Carl E. Braun, vice president and mill manager. His health failed in 1938 and he resigned his position with Hawley. During the next two years he fully recovered his health and returned to the industry as a pulp and paper mill supplies representative.

Conrad Now Master Sergeant

● James R. Conrad, former member of the laboratory staff of Port Angeles division of Rayonier Incorporated, has been made a master sergeant in the 301st Ordnance Regiment, U. S. Army, at Camp Sutton, North Carolina.

Stork Visits Ray Dupuis Home

● Mr. and Mrs. Raymond A. Dupuis, Port Angeles, Wash., became the parents of a boy on April 17. Mr. Dupuis is resident manager of Washington Pulp and Paper division of Crown Zellerbach Corporation. The youngster is the Dupuis' second boy.

R. J. LeRoux Named Manager Of Weyerhaeuser Everett Mill

● On May 15th, Robert B. Wolf, manager of the Pulp Division Weyerhaeuser Timber Company, announced the appointment of Russell J. LeRoux as manager of the company's unbleached sulphite pulp mill at Everett, Washington. Mr. LeRoux succeeds the late G. S. Brazeau, who died suddenly of a heart attack early in the morning of March 17th after having served as manager from the time the mill was started early in 1936.

Russ LeRoux has been superintendent of the Everett mill for a year and a half, coming to the Weyerhaeuser organization from the superintendency of the Interlake Mill of the Consolidated Water Power & Paper Company at Appleton, Wisconsin. His experience includes both pulp and paper making. While attending the University of Wisconsin and Lawrence College, he worked during summer vacations in the sulphite mill and on the paper machines of the Nekoosa-Edwards Paper Company. Upon completing his college career, Russ LeRoux worked a year and a half in the sulphite and paper making departments before joining the Consolidated Water Power & Paper Company at Appleton as a chemist.

In 1926 and 1927 he was in charge of the laboratory and in the latter year became assistant sulphite superintendent. Two years later he was made sulphite superintendent. He is a member of the American Pulp & Paper Mill Superintendents Association and also of TAPPI.



RUSSELL J. LeROUX, Manager, Weyerhaeuser Everett Mill.

Important Factors In the Manufacture of Fast Hydrating Unbleached Sulphite Pulp From Western Hemlock

by CARL SHOLDEBRAND*

Introduction

● The hydration or beating quality of unbleached sulphite pulp becomes important when the paper mills using such pulp strive to increase their production. In the case of paper mills manufacturing sulphite papers using 90 to 100 per cent of unbleached sulphite pulp in their furnish, the beating quality of the pulp becomes very important. If the beating quality of the pulp is correct for a certain paper mill, and other physical pulp tests are at least fair, both paper machine production and paper tests will be high.

In the following, the hydration or beating quality of the pulp is designated as "beating time" by which is meant minutes of beating needed to reach 500 freeness using a standard Valley Iron Works test beater and Canadian freeness tester. Other physical tests such as Mullen and tear are also measured at 500 freeness. A pulp having 15 to 16 minutes beating time to 500 freeness is a fast hydrating pulp and papers such as meat wrap and fruit tissues made from same will have good Mullen and tear provided the refining process is carried out correctly. A pulp having 18 to 19 minutes beating time is a slow hydrating pulp and sulphite papers made from same will have a low Mullen and a high tear.

All data and charts presented in this paper were collected and compiled during a period of three years from tests and operating records of an unbleached sulphite pulp mill on the Pacific Coast producing approximately 110 tons per day. Each chart represents one definite operating condition and data for it were collected while all other conditions were constant. For this reason, each chart should represent reliable and true findings.

Papers referred to in judging the pulp are meat wrap, fruit tissues, imitation parchment and other sulphite papers using 90 to 100 per cent of unbleached sulphite pulp in their furnish.

Chart No. 1 shows that the paper quality improves with decreasing beating time of the pulp. The paper quality is expressed in per cent of standard specifications including Mullen, tear with and tear across the sheet. It is conclusive that the beating time has a definite and decisive bearing on the paper quality. For this reason, all factors which possibly could have an influence on the beating time were studied and charted. It was found that the size of the chips, the moisture of the chips, the initial temperature of the acid, the composition of the acid and the organic number (1) of the acid affected the beating time. These operating conditions are illustrated on charts Nos. 2, 3, 4, 5, and 6. An attempt was

then made to find a fundamental explanation for the fluctuating beating time. The alkali soluble portion of the pulp was determined and also the sulphonated portion of the lignin in the pulp as it has been observed during periods of good acid penetration during the early part of the cook, that the pulp produced had a shorter beating time, screened better and made better paper. These chemical qualities of the pulp are illustrated on charts Nos. 8, 9 and 10.

Operating Charts With Comments

● Chart No. 2 shows that the beating time of the pulp decreases with decreasing chip size. Long chips produce high testing but slow beating pulps unless the degree of acid penetration is very high. It may be said that the chip size should be adjusted to the beating time desired, and to the degree of acid penetration during the early part of the cook.

Chart No. 3 shows that minimum beating time is reached at about 43 per cent wood moisture and that the beating time increases both below and above this moisture figure. It is believed that difficulty in releasing entrapped air prevents fast penetration in the low range. In the upper range, increasing moisture content no doubt means slower exchange of chemicals and consequently slower acid penetration.

Chart No. 4 shows that the beating time of the pulp decreases with increasing initial acid temperature, indicating faster penetration at higher acid temperatures. If the acid circulation and the organic number of the acid are controlled, the temperature of same can be raised to 90 deg. C. or perhaps higher.

The effect of acid composition is also indicated on this chart. It shows that an acid with high combined SO_2 (1.21%) as in line B and C penetrates slower than an acid with medium combined SO_2 as in line A.

Chart No. 5 shows that the beating time decreases with decreasing combined SO_2 of the acid. It is probably more correct to say that the beating time decreases with increasing free SO_2 of the acid and that the acid penetration improves with increasing free SO_2 content of the acid.

Chart No. 6 shows that the beating time of the pulp increases with increasing organic number of the acid. At 38 to 40 organic number, the beating time is very high and the acid loses its strength while stored in the accumulator only a short time. No doubt this acid is oversaturated with organic and perhaps some inorganic compounds which consume SO_2 needed for the sulphonation of the lignin. At 30 to 33 organic number, the beating time of the pulp is usually 16 to 17 minutes. At 25 to 27 organic number the acid is very stable and the beating time of the pulp usually only 15 to 16 minutes. It may, perhaps, be concluded that decreasing SO_2 content of the acid

as the organic number rises, means slower sulphonation of the lignin and increasing beating time of the pulp.

Chart No. 7 shows that the initial Mullen test of the pulp increases with decreasing beating time. High initial Mullen test is obtained when the acid penetration is good or when conditions for thorough sulphonation of the lignin are favorable. Paper tests are usually high when the initial Mullen test is high.

Chart No. 8 shows that the beating time of the pulp decreases with increasing chlorine number which proves that the admixtures such as lignin, lignin sulphate, hemi-cellulose, etc., affect the beating quality of the pulp much more than the cellulose itself.

The upper line on the chart refers to pulps produced when the penetration is slow, and may be called the slow penetration line. The lower line refers to pulps produced when the penetration is fast and may be called the fast penetration line. For the same chlorine number, the beating time is much shorter in the fast than in the slow penetration line, from which fact it is conclusive that the composition of the admixtures must be different in the two lines. Most of the charts presented in this paper indicate that acid penetration means lignin sulphonation and it may be concluded that the admixtures in the fast penetration line contain more lignin sulphate than the admixtures in the slow penetration line. Thus the sulphonated lignin must have a decisive bearing on the hydration or beating quality of the pulp.

Chart No. 9 shows that the beating time of the pulp decreases with increasing amounts of caustic soluble products, and also with increasing amounts of lignin sulphate. The caustic soluble portion called the caustic number shows only a moderate increase. The lignin sulphate portion called the sulphonation number almost doubles for a decrease in beating time from 17 to 15 minutes. Thus it may be said that the lignin sulphate has a very decisive bearing on the beating quality of the pulp.

Chart No. 10 shows sulphonation number of pulps from six different mills on the Pacific Coast all using Western Hemlock. The semblance of the sulphonation line of pulp A which includes about forty sulphonation tests and the sulphonation line of all the other pulps no doubt indicates that the sulphonated lignin has a fundamental bearing on the beating quality of the pulp, irrespective of local pulping conditions.

Acid Penetration or Lignin Sulphonation

● The charts presented indicate that the acid penetration is the most influential factor in the manufacture of fast hydrating sulphite pulp. Actual mill experience has also repeatedly borne this out. If a more definite understanding of the acid penetration could be found, the pulping process could be better adjusted

*Sulphite Superintendent, Hawley Pulp & Paper Co., Oregon City, Oregon. Presented at the Joint Meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association and the Pacific Section of TAPPI, Portland Hotel, Portland, Oregon, June 5-6th, 1942.

to the particular needs of the pulp desired.

The acid penetration may be physical or chemical or both. Most of the charts indicate that both occur. The chart referring to the chlorine number of the pulp indicates that the admixtures and

the chemical composition of same have a very definite bearing on the beating time of the pulp. It also indicates that the admixtures in the fast penetration line contain a larger portion of easily hydrated compounds than the admixtures in the slow penetration line.

The chart referring to caustic and sulphonation numbers of the finished pulp, definitely shows that the sulphonated lignin has a very decisive bearing on the beating quality. It also shows that the caustic number has only a moderate bearing on the same.

Chart No. 1.

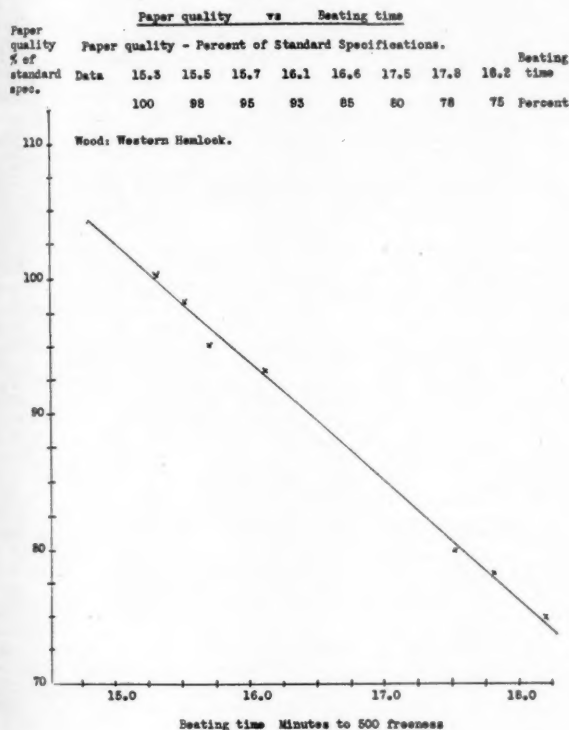


Chart No. 2.

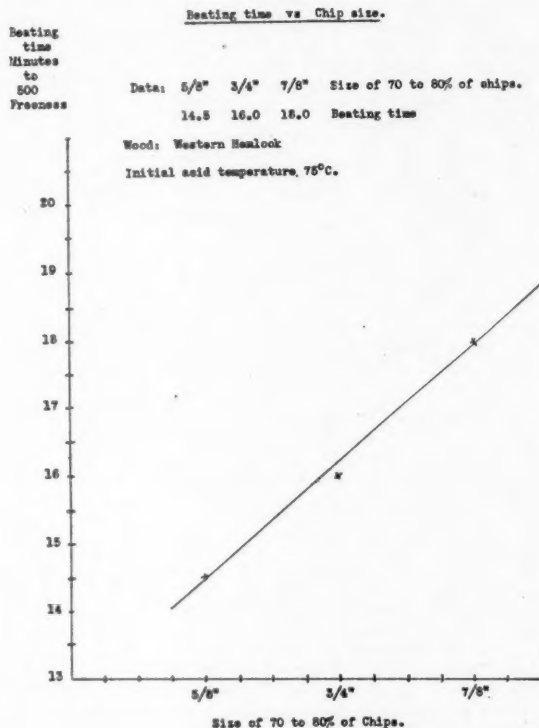


Chart No. 3

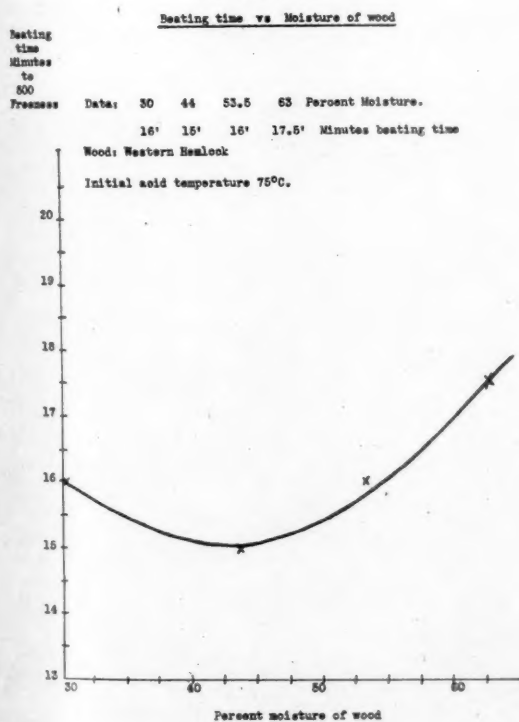
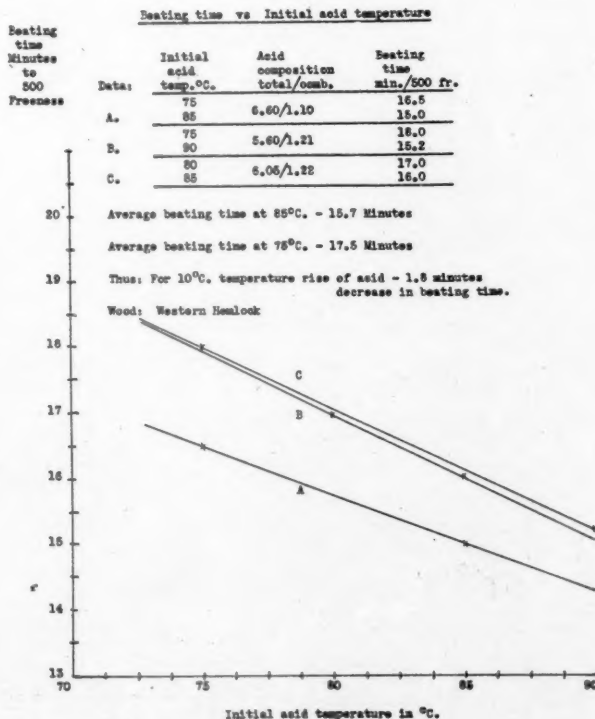


Chart No. 4.



The chart referring to sulphonation numbers of various West Coast pulps indicates that the sulphonated lignin in the pulp may have a fundamental bearing on the beating quality.

It is believed that the acid penetration proceeds according to physical and chemical laws simultaneously and that lignin sulphonate is formed as soon as the SO_2 reaches the encrusted lignin. Naturally, the conditions under which this takes place, such as chip size, chip moisture, acid and wood temperature, acid strength, acid purity and kind of lignin in the wood determines the extent to which the lignin sulphonation can proceed. Thus the term "degree of lignin sulphonation" may be used in place of "acid penetration." The degree of lignin sulphonation in the wood, is definite and can be measured at any desired stage in the cooking. For fast hydrating pulps, the lignin should be sulphonated to a high degree, for slower hydrating pulps a lesser degree of lignin sulphonation would be sufficient. It is believed, however, that an unbleached sulphite pulp containing lignin sulphonated to a high degree is well adapted to almost any kind of paper.

Cooking Method

● It has been observed repeatedly in practical mill operation, that the cooking temperature should not exceed 100 deg. C. until the chips have been subjected to a certain "acid soaking" period. It has also been observed that if the acid soaking has been sufficiently completed, the cooking temperature can be raised quickly from 100 to 130 deg. C. From 130 deg. on, most of the lignin and other admixtures go into solution. If the term "lignin sulphonation" is used, it may be said that the cooking temperature should not exceed 100 deg. C. until a certain degree of lignin sulphonation has been reached. Thus the cooking procedure may be subdivided into three stages:

Sulphonation stage—up to 100 deg. C.
Heating stage—from 100 to 130 deg. C.

Dissolving stage—from 130 to maximum temperature.

The sulphonation stage is completed when the lignin has been sulphonated to a certain degree. This point should be determined if possible by blowing out a sample of chips from the digester. The sulphonation stage is of different lengths in different mills depending upon how rapidly the lignin sulphonation can take place. An average time is three hours for mills using the hot acid system without forced circulation. It is known to be only two hours in mills using the hot acid system and forced circulation with indirect heating. In mills using cold acid systems without forced circulation the sulphonation stage is probably close to four hours. It is evident that the sulphonation stage can be shortened by improving the lignin sulphonation. If this is done properly, the cooking time can be shortened without impairing pulp quality.

The heating stage can be as short as heating facilities allow, provided that the lignin has been sulphonated sufficiently in the sulphonation stage. Two hours is usually needed for heating.

The dissolving stage requires two to four hours depending upon acid circulation, temperature and kind of pulp desired. It is needless to say that in the case of fast hydrating paper pulp the lignin sulphonate produced in the sulphonation stage should not be dissolved out entirely. Good acid circulation and low cooking temperature will tend to preserve the lignin sulphonate. In the case of dissolving pulps, conditions and requirements are naturally entirely different.

Pulp Quality and Tests

● The pulp is tested and evaluated according to physical and chemical tests. The physical tests consist of standard

test beater tests at 500 freeness including Mullen, tear and beating time, etc. The chemical tests include a caustic boil and a sulphonation test. The caustic boil, called the caustic number, denotes per cent of soluble in hot one per cent NaOH solution (2) and the sulphonation test called the sulphonation number denotes per cent of lignin sulphonate in the pulp (3).

The caustic number does not change a great deal. It is ordinarily 12.5 to 13.0 per cent but has been up to 14.0 per cent at times when the digester circulation is exceptionally good. Pulps from other mills have approximately the same caustic number except in cases where the digester circulation is known to be good, and the maximum temperature low. The sizing of the paper is affected by the caustic soluble portion of the pulp. Improved sizing and a reduction in the amount of size needed has been noticed when the caustic number of the pulp exceeds 13.5 per cent.

The sulphonation number affects the beating quality of the pulp more than any other factor. It serves as a check test on the beating time and it also serves as a guide or indicator of conditions in the cooking process. A certain amount of the lignin sulphonate no doubt is needed to produce the parchmmentizing effect or to act as an adhesive. A high tear test can be produced with the cellulose alone, but a high Mullen test can only be produced if a sufficient amount of adhesive is present to cement the fibers together. Why is starch added to the paper when the Mullen test is low? Most likely to bind the fibers together when the fiber itself lacks adhesive agents.

Sulphonation numbers of pulps from other mills check quite well with the beating time of the pulp. If a relative figure is used showing sulphonated lignin to total lignin, it is found that some mills have a higher degree of sulphonation in their pulp than others.

Chart No. 5

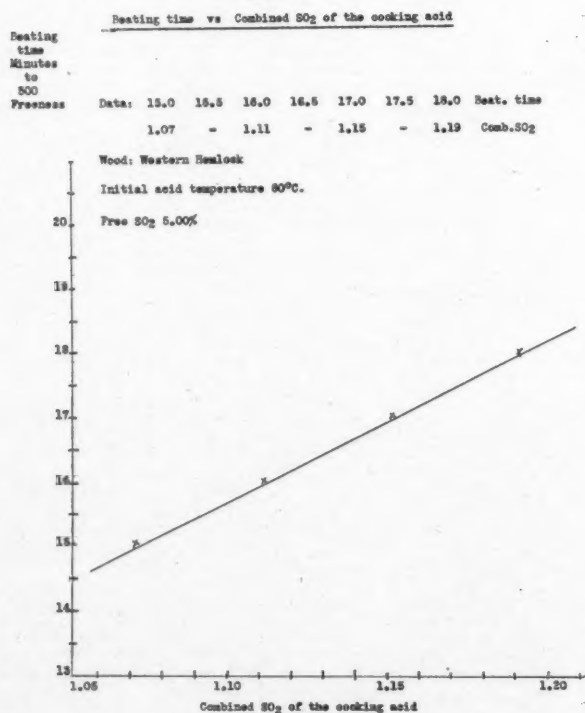
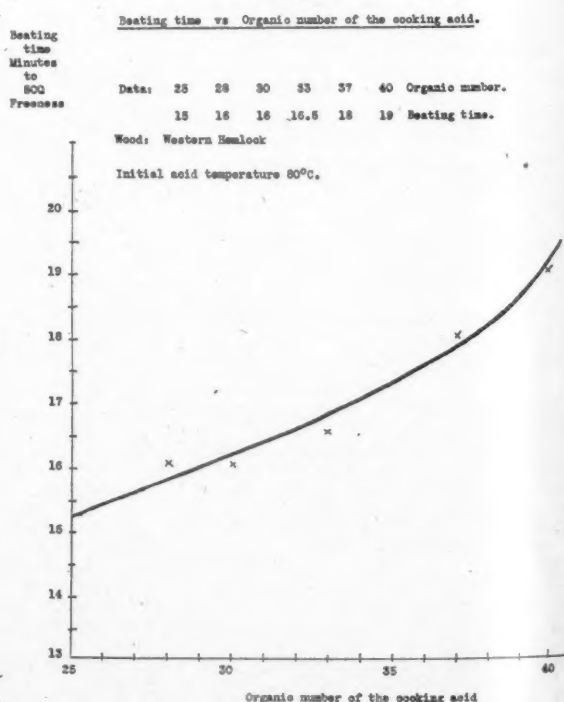


Chart No. 6.



These and other tests are tabulated in the accompanying table and also shown graphically on chart No. 10.

The sulphonation number can be adjusted by changing the chlorine number of the pulp. The degree of sulphonation

of the lignin at the end of the sulphonation stage should naturally be as high as possible, and the lignin sulphonate thus produced should be preserved in the dissolving stage as much as possible. Each pulping system has its own limits depend-

ing upon local conditions, and for this reason, one system may produce a fast beating pulp with a low chlorine number and another system may produce a fast beating pulp with a high chlorine number. In each case, the same amount of

Chart No. 7.

Beating time vs Initial Mullen test.

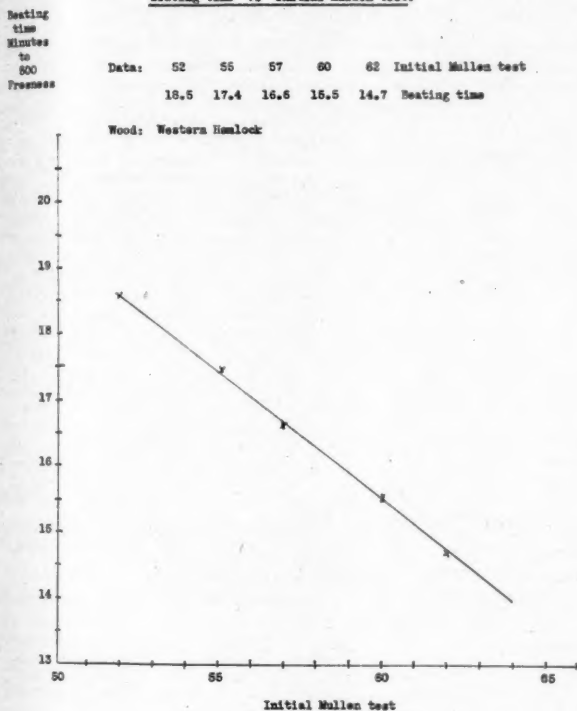


Chart No. 8.

Beating time vs Chlorine number of pulp

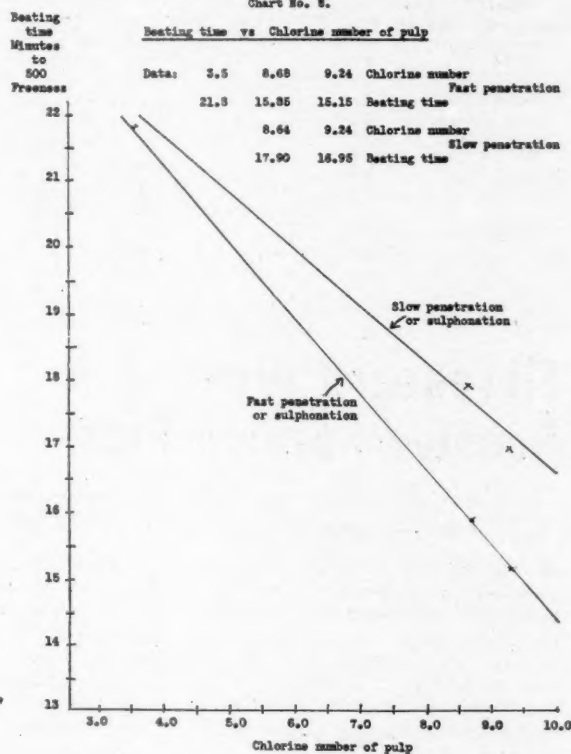


Chart No. 9

Caustic and sulphonation numbers vs Beating time.

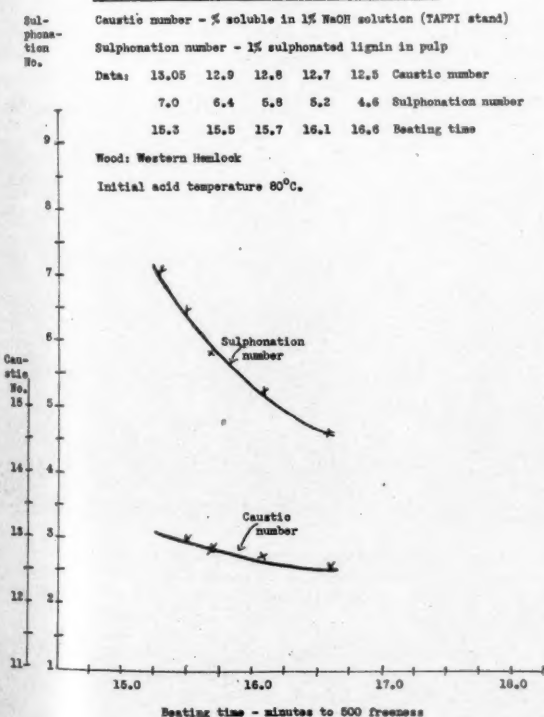
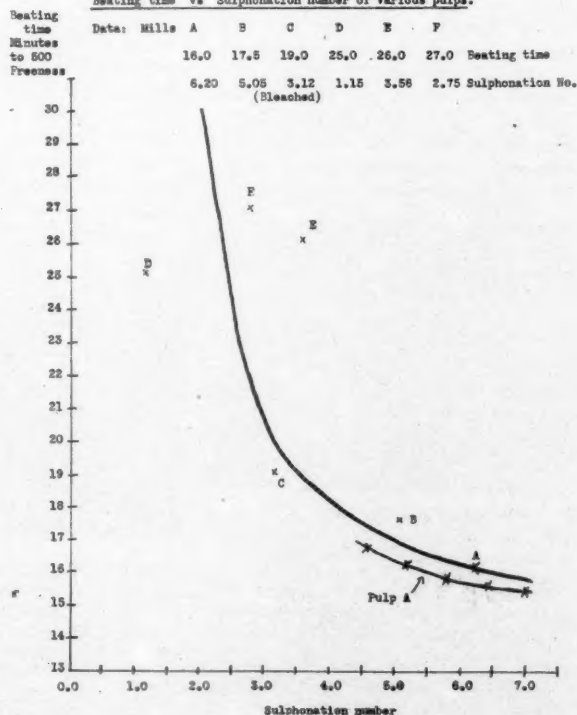


Chart No. 10

Beating time vs Sulphonation number of various pulps.



lignin sulphonate must be retained in order to have the same beating time of the pulp.

Conclusion

● An attempt has been made to find an explanation for variations in beating or hydration quality of unbleached sulphite pulp in a Pacific Coast mill using Western Hemlock. A number of other

pulps have also been tested for comparison. Theories advanced by Hagglund served as a guide.

Literature Cited

- (1) Triplet, C. L., Pacific Pulp & Paper Industry, March, 1940.
- (2) TAPPI standard method.
- (3) Mottet, A. L., Pacific Pulp & Paper Industry, October, 1939.

Pulps	Cl No.	Caustic No. %	Sulphon No. %	Degree Sulph %	Mullen at 500 Free	Beating time min. to 500 Free
A.	8.2	12.7	6.20	75.6	100	16.0
B.	7.3	12.9	5.05	69.3	102	17.5
C.	2.7	12.6	3.12	118.0	107	19.0
D. (bleached) ..	nil	6.9	1.15	-----	58	25.0
E.	3.9	12.3	3.58	91.8	72	26.0
F.	3.7	12.5	2.75	74.4	76	27.0

Coast Men Receive Degrees From Institute Of Paper Chemistry

● Among those receiving degrees from the Institute of Paper Chemistry in Appleton, Wisconsin, on May 24th, were two Pacific Coast men, William G. Hulbert, Jr., of Everett, Washington; and John S. Barton of Longview, Washington.

Mr. Hulbert received his Ph. D. degree in chemistry, while Mr. Barton obtained his M.S. degree in chemistry. Mr. Barton is the son of Everett Barton of the Pulp Division Weyerhaeuser Timber Company, Longview.

Two other Westerners receiving degrees were Willard A. Schenck of Worden, Montana, who became a Ph.D., and Charles M. Sigvardt of Great Falls, Montana, who received an M.S. degree.

Fibreboard Men Receive Service Pins

Sumner Division holds semi-annual dinner at which service pins and suggestion awards are presented.

● The Sumner Division of Fibreboard Products Inc. held its semi-annual social meeting at the Winthrop Hotel in Tacoma, Saturday evening, March 28th. The occasion was marked by the attendance of Mr. N. M. Brisbois, vice president in charge of production, whose headquarters are in Stockton, Calif.

After dinner, Mr. Brisbois presented service pin awards to a number of Sumner employees, and suggestion awards to Mr. J. Pratt, J. Harvey, F. Woods, J. Biggs. The suggestion awards are an important feature of all Fibreboard plants. Employees with new ideas are paid for their suggestions, whether the idea is of benefit to the company or to the employees.

Since the inception of suggestion awards at Sumner, 1358 suggestions have been submitted; of these, 894 or 65.8 per cent have been adopted.

Mr. Brisbois presented a short history of the Sumner plant and congratulated the recipients of the service awards, with a friendly word of praise for each man.

As second speaker of the evening, Mr. Troy Carey, Northwest sales manager for Fibreboard Products Inc., spoke on the part Fibreboard is playing in the War Program.

Much work has been done by the Sumner men in connection with Civilian Defense. This was brought to the attention of the gathering by Mr. A. Hayes, assistant fire chief of Sumner, and an employee of Fibreboard. Mr. Hayes, together with

Mr. Vaughan, plant chemist, attended a three-day school conducted by the army for defense workers, for the purpose of showing them how to fight incendiary and gas bombs. This information was in turn passed on by the speaker.

Mr. Vaughan, who is also safety engineer, informed the meeting that arrangements had been made whereby plant instructors would conduct a Red Cross First Aid Course for the employees, enabling shift workers to attend all the classes. He also spoke of the work Fibreboard is doing in regard to the purchase of Victory Bonds by means of payroll deductions and mentioned posters prominently displayed throughout the plant, encouraging the purchase of such bonds.

Fibreboard employees attending the dinner were Mr. N. M. Brisbois, Mr. M. Sanford, Mr. T. Carey, Mr. G. Langtry, Mr. A. J. Erickson, Mr. F. Wiggins, Mr. J. Bullis, Mr. D. Rager, Mr. A. Charnock, Mr. C. Snow, Mr. W. Mallory, Mr. L. Osborne, Mr. V. Saari, Mr. T. Powers, Mr. A. Anderson, Mr. J. Mellor, Mr. W. Talkington, Mr. F. Hilliard, Mr. J. Sperb, Mr. J. Stahlhult, Mr. H. Meyers, Mr. R. Vaughan, Mr. V. Buchanan, Mr. J. Dunn, Mr. C. Morgan, Mr. A. Hallberg, Mr. R. Hurd, Mr. C. Caster, Mr. B. Bruce, Mr. S. Kendall, Mr. A. Hayes, Mr. F. Woods, Mr. J. Biggs, Mr. J. Pratt, Mr. J. Harvey, Mr. E. Stout.

Mr. W. Sutter of Tacoma exhibited pictures showing the early phases



FIBREBOARD SERVICE PIN WINNERS at Sumner, Washington. Left to right, standing, MARK E. SANFORD, Resident Manager; C. SNOW, 10-Year Pin; J. BULLIS, 15-Year Pin; WILLIAM MALLORY, 5-Year Pin; H. POWERS, 5-Year Pin; D. DRAGER, 10-Year Pin; A. CHARNOCK, 10-Year Pin.

Seated, L. OSBORNE, 5-Year Pin; M. SANFORD, 5-Year Pin; V. SAARI, 5-Year Pin. On the extreme left is N. M. BRISBOIS, Vice President In Charge of Production, Fibreboard Products Inc., Stockton, presenting a 15-Year Pin to F. WIGGINS.

of the Japanese invasion of China and their treatment of the Chinese people. These pictures were filmed by Mr. Sutter during his residence in China and proved to be of great interest to the gathering.

It is interesting to note that the Sumner Division, although comparatively young, boasts a majority of its employees holding service pins of five years or more. Of these, ten hold 20-year service pins, twenty-two have 15-year pins, fifty-two have 10-year pins, and fifty have 5-year pins.

Reed Hunt Now Office Manager At Camas

● Reed O. Hunt, office manager, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, first became associated with industry in 1927, when he went to work for Washington Pulp and Paper Corporation at Port Angeles, as storeroom clerk. Shortly afterwards he moved to the plant office as accountant. In 1931 Mr. Hunt became assistant office manager of the Port Angeles mill and continued in this capacity until 1934, when he was transferred to Crown Willamette Paper Company at Camas as office manager. He remained here until the following year when he took over as office manager of Crown Willamette Paper Company plant at West Linn, Oregon.

Mr. Hunt's next move was in 1938 when he returned to Camas on a temporary basis, acting as office manager of both the Camas and West Linn plants. During the following year he returned to West Linn, again as office manager.

The first of last April Mr. Hunt again took over in Camas as head of the office of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation. He and his family have since established their residence in Camas.

Besides Mr. and Mrs. Hunt the family includes Reed, Jr., 15 years old and Patricia, a 14-year-old daughter.

West Linn 35-Year Club Holds Meeting

Charles Croner elected President and Frank Hammerle, Secretary, 18 men receiving 35-Year Pins have served a total of 625 years.

● The West Linn Thirty-Five Year Club at Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, West Linn, Oregon, held its annual meeting April 22nd at the Crown Willamette Inn. President Clarence E. Bruner, resident manager of the West Linn mill, presided as toastmaster for the evening.

J. D. Zellerbach, president of Crown Zellerbach Corporation, was the principal speaker. He told the group of veteran employees how the industry has progressed during their generation; how the members of the 35-year club learned the manufacture of pulp and paper the hard way and are now passing on their knowledge and industrial skills to the younger employees. Mr. Zellerbach emphasized the permanence of the organization.

Albert Bankus, vice-president, Crown Zellerbach Corporation, refreshed the memories of the members and guests by calling attention to the improvements that have been made at the West Linn plant since he left there just 22 years ago this April. The improvements include additional buildings, replacement of old buildings and a host of modern machines and equipment. As a result of the changes the capacity of the machines has been raised and better products are manufactured, according to Mr. Bankus.

Twelve employees, who have been with the company for 35 years, became members of the club and were awarded 35-year service pins which were presented by Mr. Zellerbach. These men are Wm. C. Allen, R. A. Austin, Wm. J. Carden, John Gengler, E. J. Johnson, A. H. McDonald, Frank Sekne, Henry Schuler, Henry Stall, Richard Valliere, Matt Waitkevitz and Pete Waitkevitz. Mr. Bankus also became a member of the West Linn club.

Service pins were also awarded to four thirty-year men, who were guests at the club meeting. Those receiving thirty-year pins from Mr. Zellerbach are Ed Bolle, Joe D. Gurley, Al Lewis, E. T. Walker. Harley Miller was presented with a forty-year pin and Ira Lytsell a 45-year pin.

The aggregate time represented by the service pins presented to these 18 employees is 625 years.

Charles Croner, groundwood mill shift foreman, was elected president of the club for the ensuing year and Frank Hammerle, finishing foreman, was re-elected as secretary.

Among the guests at the meeting were J. E. Hanny, resident manager, Camas, Washington; Paul Middlebrook, resident manager, Lebanon; Ray Dupuis, resident manager, Washington Pulp and Paper Corporation, Division of Crown Zellerbach Corporation, Port Angeles; E. H. Vicary, Port Angeles; Reed O. Hunt, office manager, Camas; M. J. Otis, assistant resident manager, West Linn; J. A. Ream, personnel and safety supervisor, West Linn; and Robert T. Kimberlin, assistant to the president, San Francisco, California.

Electric Steel Foundry Awarded Navy "E"

● The Electric Steel Foundry Company of Portland, makers of stainless, manganese and other alloy castings for a large number of industries including pulp and paper, has been signally honored by being awarded the Navy "E" for excellence in completing Navy work.

ESCO is the first foundry and the fourteenth plant in the country to receive the coveted award. Ceremonies, including the raising of the "E" pennant will be held at the plant on July 8th.



Attending the Dinner given by the Sumner, Washington, Division of Fibreboard Products Inc., at the Winthrop Hotel in Tacoma, March 28th, were the following men:

Back row, left to right, W. MALLORY, B. BRUCE, A. CHARNOCK, C. CASTER, D. RAGER, A. HALLBERG, R. VAUGHAN, A. EICKSON, G. LANGTRY, E. STOUT, A. HAYES, C. MORGAN, F. WOODS, J. BIGGS. Third row, J. STAHLUT, C. SNOW, L. OSBORNE, V. BUCHANAN, J. SPERB.

Second row, left to right, S. KENDALL, T. POWERS, MEL SANFORD, V. SAARI, J. PRATT, J. HARVEY, F. HILLIARD, W. TALKINGTON, R. HURD, H. SCHOFFEN. Front row, seated, J. BULLIS, J. DUNN, F. WIGGINS, TROY CAREY, Northwest Sales Manager, Fibreboard Products Inc., Seattle; N. M. BRISBOIS, Vice President in Charge of Production, Stockton; MARK SANFORD, Resident Manager, Sumner Division; H. MEYERS, Board Mill Superintendent, Sumner Division.

Vacuum Pump Problems In the Manufacture of Pulp and Paper

by C. L. CLARK*

A GREAT deal of progress has been made in the last few years by the paper machinery manufacturers in the United States and Canada in improving and designing machines for greater production of pulp and paper. For instance, newsprint is being made today at 1500 feet per minute, light weight kraft at 1500 feet per minute, book paper at 1000 feet, certain grades of tissue at 2000 feet, strawboard at 500 feet, and other board at 400 feet or better.

Partly responsible for the attainment of such machine speeds is the proper application of vacuum pumps to the machines for moisture removal at the wet end. The suction roll manufacturers have made great strides in the last five to ten years. We have worked hand in hand with them to discover the most efficient pump installations for the individual rolls and have assisted them in their experiments with various box widths in these rolls, to arrive at a combination of suction roll and pump that would remove the greatest amount of moisture for the least possible amount of power.

Partly from the study of these conditions and from similar study of other requirements on paper machines, we have learned that one pump design is not suitable for all conditions and therefore have developed three types or styles that are recommended for various conditions. We call them the K, the L, and the H types; the K being designed for the low vacuum ranges up to 10 inches mercury vacuum; the L being designed for the range between 8 inches and 20 inches, and the H being designed for very high vacuums above 20 inches.

Complete records of each pump installation in the United States have been kept and checked periodically both with the machine builder and with the paper mills themselves, to discover whether or not we have chosen correctly. From such a study and analysis we have arrived at a method of picking the

proper style and size pump for each individual application on paper and pulp machines. We know, for instance, from our records of past experience the proper box width for a suction couch roll on a machine making newsprint at high speed, and we also know how much air that sheet of newsprint will pass per minute at a given vacuum. Our experience has taught us that on newsprint a high vacuum, a range of between 19 inches and 21 inches of mercury, is desirable both from the standpoint of water removal and because of the hardening effect on the sheet of this high vacuum. This is just one example. We follow a different formula for the suction press on board, and again, an entirely different formula for a suction drum press on board. In each case we have studied the results until we know just about what box width will be picked for any given sheet of paper or board as well as the air capacity and vacuum required to get the greatest amount of water out of the sheet with the least amount of power.

Going through briefly the various points of water removal on the different type machines I hope to hit points that are interesting to you individually in order to bring out a discussion of your problems at the end of this paper.

As we know, there are two fundamental types of paper machines in common use today. All other machines being an outgrowth from either one or the other of these two which are, namely, the fourdrinier and the cylinder machines.

Vacuum Flat Boxes

● On a fourdrinier machine, the first point of water removal on which vacuum pumps are required is the wire flat box. In attempting to get the maximum amount of water out here, certain points have been overlooked in some mills, particularly where the machine speed has been stepped up from year to year since it was first installed. On the older machines these boxes were designed for a given tonnage and were more than ample to take care of the job for which they were designed. However, many of these machines have been speeded up, some as much as 100%, and because

of this increase of speed it has been necessary to bring the stock on the wire at a very low consistency with the greatest possible amount of water in order to get formation on the short wire in the reduced time interval between head box and wire boxes. Naturally, a great quantity of this water drains out by gravity before reaching the boxes but still there is often more than 100% more water to be removed through the flat boxes than the boxes were designed to handle.

The first inclination was to add more vacuum pumps to raise the vacuum. This helped very little. If a gauge were installed at the front end of the flooded box there would be found considerable loss in vacuum between this point and the pump. The reason for this is the flooded condition of the box because there is more water to handle than the old style shallow box will pass. This causes the flow of air to be restricted resulting in friction loss in the box and its connecting pipe. Sometimes this condition can be improved by making additional connections to the flat boxes or by increasing the pipe size to the individual box to allow more air and water to pass out to the main header, but very often the box itself is still too shallow to handle the quantity of water that comes to it. If you feel that you are not getting sufficient water out at the flat boxes on your machine this point might bear looking into. In some cases we have suggested that the mill get in touch with the machine builder for a recommendation on one or two new boxes to go in No. 1 and No. 2 positions on the machine where the greatest quantity of water is handled. If you will check the design of the boxes the paper machine builders are building today you will find that these boxes are much deeper and in most cases wider and some have the bottom slanting towards the outlet. All have considerably larger outlet connections. One mill helped this condition on an old machine by making connections at the front end of each box in addition to the ones on the back side and although the vacuum at the pumps dropped considerably, more water was removed at this point and the results were satisfac-

*Pulp and Paper Division, Nash Engineering Co., South Norwalk, Connecticut. Presented at the Joint Meeting of the Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Portland Hotel, Portland, Oregon, June 3-6th, 1942. Mr. Clark also presented this paper before the meeting of the Papermakers and Associates of Southern California in Los Angeles, June 18, 1942.

tory. The mill did not require more pumps but simply needed these additional connections or new boxes.

Lower Vacuum—Longer Wire Life

● I can think of several mills in the last year that have followed suggestions along these lines with good results. Naturally, the lower the vacuum on the wire boxes the longer the wire life and less power is required to drive the vacuum pump and wire. This is one reason the so-called flat box systems that have been introduced in the past few years have been successful on replacement installations. The bottlenecks were removed, less power was required and better water removal resulted. This can be worked out by your own engineers or typical installation drawings are available to you at your request.

The question may come up as to what is the proper vacuum to carry on flat boxes on a fourdrinier machine. This varies between 2 inches and 10 inches mercury depending on the sheet of pulp or paper that you are handling. The kraft board manufacturers require about 10 inches vacuum on all boxes for best results and the tissue manufacturers may only require two or three inches vacuum at this point. The interesting thing about this is that both use approximately the same amount of air per square inch of box opening regardless of the paper or pulp that is being made or dried. This requirement calls for the K type pump which is more economical in the low vacuum range.

Rotating Box Saves Wires

● I personally believe that the day of the dry flat box is about over. By that I mean that with the effort to increase expensive wire life and at the same time increase machine speeds must come some kind of a rotating box to use on the wire beyond the point where the wire is lubricated with water, as it is pretty well established that from this point on, the wear on the wire is the greatest. There has been some effort in this direction already. Right here in the Northwest you are using a rotating type of flat box that has proved satisfactory for slow speeds, and fairly narrow machines. Also, there is a box made that has a rotating perforated belt carrying the wire on top of it that has proved satisfactory on certain types of machines. The last step in this direction, and one that may work out for high speed wide machines, I believe, is a box that is actually a suction roll except that it is used in the posi-

tion of the dry boxes on the machine. If a satisfactory box of this type is found you naturally can expect great production with a minimum of wire cost. This also permits a fair high vacuum at this point and therefore better water removal is obtained.

Another consideration on the flat boxes which I have not mentioned is the separation of the air from the water before reaching the vacuum pump. On most machines the water comes from these boxes in such a quantity that it is impractical to put it through the vacuum pump economically and various means of separation have been worked out. The pumps will handle less than 1% of liquid by volume economically. The most satisfactory means of separation is the individual barometric leg for each flat box. However, it is often impossible to install this type separation because there is not ample basement below the machine to allow a barometric leg to function properly. The only alternative in this case is to use a separator in the form of a tank. The water is removed from the bottom of the separator with a centrifugal tail pump designed especially for this service. The individual barometric leg on each box allows individual control of the vacuum carried on each box, which on some machines seems important. This type installation seems to require the least amount of air and is the easiest to control. We have made up typical drawings and are glad to help you lay out your own system without cost to you.

It is not generally good practice to handle the flat boxes and the suction couch with the same pump because of the differential in vacuum between the two. If properly piped up and the correct type pumps are used on each application, independent of each other, less power is required and the first cost is no greater. Individual control is, therefore, more satisfactory.

Suction Couch

● The next step in water removal is the suction couch. Box widths of suction couches vary tremendously. By box width I mean the distance between the seal strips in the roll. These vary from 4 inches to 14 inches. I believe the widest is used on kraft board in the south, and the narrowest on light weight free tissue machines, or slow operating pulp drying machines. Wide boxes are used when the sheet is dense enough to retard the flow of air and water through it, and when high machine speeds are desired. The wider box allows a greater amount

of time for water removal at this point per individual square inch of paper or board surface. For a time we tried to base our recommendation of the pump size on a given vacuum for a suction couch roll on a given sheet of paper on a machine of given width. We changed our method of figuring, however, and now base it entirely on the area under vacuum and the resistance to air flow of the sheet being made so as to produce the best removal of moisture. Through experience, we know pretty well where the vacuum will fall for a given sheet but this may vary quite a bit depending on the freeness of the sheet so the inches of vacuum attained is therefore not the final criterion.

However, the volume of air to be handled does not change very much. Therefore, in checking the pumps on a given machine to find out whether or not there is enough capacity on the suction couch, we check not the vacuum that is being carried on the couch, but the cubic feet of air per minute passing through the couch, letting the vacuum fall where it may. One reason advanced for keeping the vacuum up as high as economically possible is to eliminate slippage of the wire, and obviously for the same reason the vacuum on the boxes should be kept as low as possible to both reduce slippage and to prolong wire life.

We know through experience that a light sheet of kraft bag paper requires approximately the same amount of air at the couch as a sheet of book. But on kraft stock you may get only 7 inches to 9 inches vacuum and on the book 12 inches to 18 inches vacuum. It is seldom necessary to separate the water from the air coming from the couch ahead of the vacuum pump because there is not a sufficient quantity of water to overload the pump. We do separate this air and water in certain instances, however, if the temperature of the stock is very high. By removing this hot water ahead of the pump and using cold seal water in the pump a higher vacuum is attained and better removal of moisture results.

Suction Press

● The next vacuum application is the suction press. The suction press has really just come into its own in the last few years and as you know has proved a highly successful method of removing moisture from the sheet without injuring it. Here the vacuum pump plays an entirely different part. Contrary to common

belief, the vacuum pump has little or nothing to do with drying the paper at this point. The pressure at the nip is almost entirely responsible for the removal of water from the sheet. The vacuum pump really only removes the pond of water formed ahead of the nip and dries up the felt.

It is necessary, therefore, to carry only enough vacuum to continually remove this pond of water and draw it into the holes in the suction roll and hold it there until the sheet and felt have left the roll. Slightly higher vacuums on high speed machines at this point are necessary because centrifugal force has to be overcome and it requires more force to retain the water in the holes of the roll until well after the felt and sheet have left the nip. Naturally more vacuum is required to do this job on machines using closely woven felts and making heavy sheets than on machines using an open felt with a light sheet of paper. It has been found that there is no advantage in carrying the vacuum on the suction press up beyond the point necessary to keep the surface of the roll leaving the nip dry. Sixteen to twenty inches of vacuum in most cases is sufficient. There is never more than enough water coming from the suction press to satisfactorily seal the pump, and as a matter of fact, additional seal water usually has to be added. Therefore it is unnecessary to separate this water from the air.

The number of suction presses you can use to advantage on your machines depends on several factors best determined by the suction roll manufacturers. There are installations in the south on high speed kraft board machines, where three suction presses in series have been found to be successful for maximum production.

If you have an old suction press that you are in doubt about, a good way to check for leakage is to throw a piece of oil cloth across the working area sealing the holes of the roll directly over the box in the roll during a shut down period when the felt is off the machine. Then start your vacuum pump. If you are able to pull up 21 inches or 22 inches vacuum the chances are that your roll is in pretty good shape. If not, you should either look into the condition of the pump or the roll. It is fairly easy to check the condition of your pump by simply blanking off the suction side and running the pump. If the pump pulls up to 24 inches or 25 inches vacuum, then you can look for your trouble in the roll rather than in the pump. This

saves you the time and expense of tearing one down and then the other, trying to spot the difficulty.

There are many successful installations of the dual press today. This is a suction press with two points of pressure contact and two suction boxes, giving you approximately the same results as you would get with two suction presses in series. Naturally, this saves considerable space, piping and expense and it is today successfully installed on a great many different grades of paper board.

Felt Boxes and Conditioners

● Felt boxes or felt conditioners should be connected to a separate pump, usually of the K type, as they operate at very low vacuums and if connected to the same pump that is being used to handle the couch or press the effectiveness of those suction rolls is reduced. It is a good idea to separate the water coming from the suction felt boxes, or from the conditioners because it always contains some felt nap and dirt. Because of the low vacuum, barometric separation can usually be arranged without much difficulty. This water is generally piped to the sewer because it contains very little fiber and it is not desirable to put the felt nap back into the white water. The lowest possible vacuum to properly clean the felt should be carried at this point as each additional inch of vacuum here means additional wear and, therefore, shorter felt life. Many mills have installed suction felt rolls replacing the suction boxes in order to eliminate this wear and if suction felt rolls are used it is possible to carry higher vacuums without any detrimental effect to the felt.

Cylinder Machines

● Now we get to the cylinder machine, which is more commonly used for heavier sheets and is seldom operated above 500 feet per minute. The suction roll manufacturers have designed special rolls for these machines to be used immediately after the last cylinder. One is commonly known as the suction drum press and another is the suction extractor roll. They are fundamentally for the same purpose of drying up the sheet and the felt sufficiently so that it may go into the plain presses without crushing or blowing. Both rolls use a rider roll on top which acts as a press roll, however, in both cases the vacuum pump is depended on to remove some moisture before reaching the nip. In some cases it is necessary to separate the air from the

water at this point because of the large quantity of water removed and in other cases because of the abrasive material carried in the water.

With material such as straw board or roofing felt there is enough sand and dirt to actually cause considerable erosion within the pump and the life of the pump is materially increased if this water and dirt is separated before reaching the pump. It is generally necessary to use a specially designed centrifugal tail pump to remove this water as basements are seldom deep enough to provide for barometric separation at this point. Vacuums between 17 inches and 21 inches are desirable for best results.

Next in line on the cylinder machine is the suction press which in effect is the same as the suction press on the fourdrinier machine. It is only necessary to separate the water and air from the suction presses on cylinder machines when the stock contains abrasive materials and not because of the quantity of water to be handled.

Two or more suction presses are often used on cylinder machines and the position of these suction presses seems very important. One high speed cylinder machine operator claims that two suction presses in series do not give good results unless a plain press is used between them. His theory is that the plain press redistributes the remaining water or moisture in the felt and sheet through the felt and sheet which in turn results in better moisture removal on the following suction press. The reason for the improvement is difficult to explain. Possibly it was due to the fact that the void created by the removal of water by the first press was closed by the action of the plain roll, and the second suction press works on a more dense sheet. I know, for instance, that this particular superintendent had two suction presses installed in series on a high speed straw board machine and did not get the results that he expected with the second suction press. He removed the second suction press and put it in the position of the plain press, moving the plain press up into the position of the second suction press, so that the sheet first went through the first suction press, then a plain press, then a suction press and he received startlingly improved results.

The same remarks apply to suction felt boxes, conditioners and suction felt rolls on cylinder machines as applied to fourdrinier machines.

Dryer Drainage

● Dryer drainage and dryer temperature control has been worked out to a fine point by several experts in this line and we have furnished a great many combination vacuum and centrifugal condensate pumps for removal of the condensate from the dryers and for maintaining a differential between dryer sections and across the traps, as well as for removing the air from the systems. The sizing of these pumps is based on the tons of paper made in 24 hours. We figure a basis of 3 lbs. of steam per pound of paper dried, which we realize is high and therefore conservative, and then allow for 100% safety factor by doubling the figure for determining the water capacity in order to take care of the greatly increased load during start ups and allow a generous air capacity to take care of inward leakage at joints or fittings. We have several hundred such installations and checking back find that this is a

pretty safe way to size the pumps.

As you are aware, Nash vacuum pumps are also used on rotary filters, washers, etc., with a high degree of success and here again we have worked closely with the filter manufacturers and have a very complete picture of the pumping requirements for such service. These pumps are also used as chlorine, SO₂ and clean air compressors.

I have spent little or no time discussing the merits of Nash pumps as I am sure that you are all familiar with the Nash principle of operation, but if there are any questions concerning the designs, seal water requirements, or the possibilities for using them to a better advantage in your mill, I welcome your questions and comments.

The wide experience gained through many pump installations in paper mills makes it possible for us to accurately estimate the pump requirements for almost any kind of board or paper made.

Hawley First 100% War Bond Mill

● Hawley Pulp and Paper Company, Oregon City, Oregon, has acquired the honor of being the first pulp and paper plant whose employees have subscribed one hundred per cent to regular payroll deductions for purchasing War Bonds. A U. S. Treasury certificate, warranting the company to fly the Minute Man flag, was presented to Carl E. Braun, vice president and mill manager, at the dedication ceremonies of the Clackamas county victory center on May 23rd, at Oregon City.

The enthusiasm manifest in the various departments of the Hawley Pulp and Paper Company, under the leadership of John H. Smith, president, and Mr. Braun, in the current bond program has contributed much to the success of the drive.

Now every employee, from the president of the company on through, is buying War Bonds regularly by way of the payroll deduction system. In recognition of this accomplishment the Minute Man flag now flies from the flag staff atop the Hawley mill.

Anacortes Employees Active In War Work

● In the past six months a large percentage of the Anacortes Pulp Company's employees have taken first aid training, according to J. R. Lewis, superintendent. Five have qualified as instructors and have conducted classes in standard first aid to 40 employees besides training a number of Anacortes air raid wardens.

The pulp mill men are active in civilian defense, serving as wardens, volunteer fire fighters, auxiliary police, etc.

The company is constructing a modern locker and wash room which will be completed in a short time and turned over to the employees.

Hart Promoted To Lieutenant Colonel

● Lieutenant Colonel William Hart, formerly of the order department, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, was promoted from the rank of Major on May 13th. He is stationed in Washington, D. C., in the Specialist Headquarters Office of National Headquarters Selective Service System.

While at Camas, Hart was next in line to Howard Green, who is in charge of the order department. Hart joined with the nation's armed forces in September of 1940.

Donald Denman Elected Crown Zellerbach Director

● D. S. Denman, vice president of the Crown Zellerbach Corporation in charge of timber and logging with headquarters in Seattle, was elected a director of the corporation on June 2nd.

Mr. Denman succeeds to the directorship formerly held by the late M. M. Baruh of San Francisco.

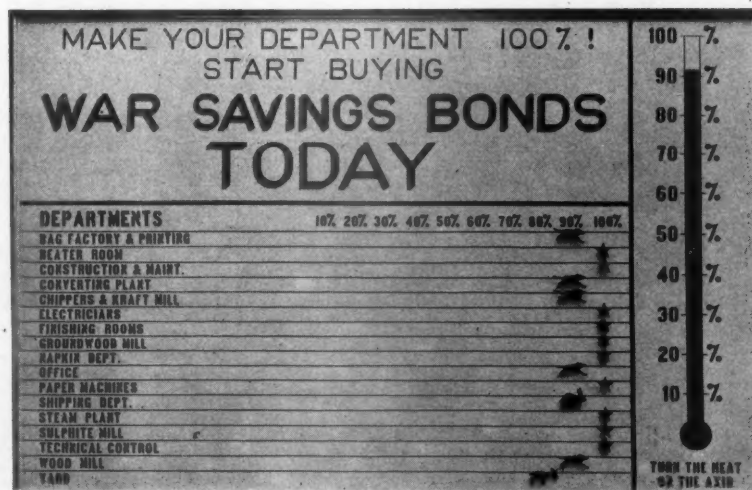
Camas Bond Drive Reaches 92%

● Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, redoubled efforts in a concerted drive to sell War Bonds to one hundred per cent of the employees. According to Resident Manager J. E. Hanny, 53 per cent of the employees were regularly purchasing War Bonds by means of payroll deductions when the intensified drive was inaugurated. In eight days eleven of the eighteen departments had subscribed to purchases one hundred per cent, and all of the departments were above 80 per cent in War Bond subscription. The average for the entire plant was raised from 53 per cent to 92 per cent in the eight days, says Mr. Hanny.

Mechanics of the concerted drive included the erection of a large display panel at the mill entrance. Each of the departments were listed on the board and the accomplishments of each were depicted graphically, according to the percentage of subscription of all the employees of each department.

The department leading "the pack" is indicated by a hare on the board, while the rest of the departments are shown by figures of hounds, except the trailing group, which is charted as a goat.

Departments which had subscribed one hundred per cent by June 8th included the following: Beater room, construction and maintenance, electricians, finishing rooms, groundwood mill, napkin department, technical control, sulphite mill, steam plant, shipping department and paper machines.



WAR BOND BUYING CHART at the Camas mill of the Crown Willamette Paper Co., Division of Crown Zellerbach Corp., showing 92% of all employees buying bonds on a payroll deduction basis as of June 1st.

Fourdrinier Wires In the War Effort

by HARRY G. SPECHT*

LAST fall and this spring, the paper mill wire cloth manufacturers were able to meet the heavy demands of the paper industry for the manufacture and delivery of Fourdrinier and cylinder wires. They were able to do this because there is sufficient available equipment, buildings and machines to handle the requirements of the paper industry.

In December and through the spring, a shortage of labor was indicated in certain shops. This condition was met partially by the addition of new men, but primarily by working overtime, up to 70 hours per week.

A shortage of copper, tin and zinc was indicated, but the wire manufacturers throughout the country joined in their efforts with a committee of the paper industry, to have the government supply us with our raw material needs. Until recently, the necessary material has been supplied to meet the heavy demands of the paper industry.

Last year, the paper mills, in anticipation of material shortages, and due to government advertising a paper shortage, placed heavy orders with the wire manufacturers, with the result that heavy shipments were made to the trade during the past nine months. The situation has been a hectic one for us. There was no need for this situation developing as it did, had there been a closer understanding between the paper industry, the government and the wire manufacturers in planning their needs.

Three months ago, we were working 60 hours a week; today, we are working less than 40. Three months ago the government was advertising a shortage of paper and urging everyone to conserve paper. Today, waste paper is being burned as there is a surplus of this material collected beyond the needs of the industry. Advertising has been cut down, resulting in many mills going to shorter hours with others closing down and laying off their complete force of men. This is not a happy situation

for us and for you to face at this time and it certainly is confusing for the paper industry, having changed from a shortage of paper to a surplus of paper within thirty days.

To make matters worse, many large companies selling cigarettes, bread, food products and cigars are still advertising over the radio that they have eliminated wrappings they formerly used for their product in order to help the war effort, due to the shortage of paper. Each and everyone of you when hearing these statements over the radio or seeing them in advertising, should take it upon yourself to write these paper customers, informing them that there is no shortage of paper.

Therefore, today the wire manufacturers not only have their original surplus of equipment to meet the paper needs, but they have the necessary manpower required for their work.

No Immediate Wire Shortage

● In regard to copper, tin and zinc, the situation is still confused. The government has allocated to our industry sufficient raw material to carry on for the next few months, and I can see no immediate shortage of raw material for Fourdrinier wires, unless the government changes its viewpoint in regard to the paper industry. The raw material needs of the wire industry are so small in relation to the size and importance of the paper industry, that I believe the government will recognize these facts and supply us with our needs in the future as they have in the past.

Four Wire Limit Order

● Last week, a second factor was injected into the picture, which created more confusion than was necessary. An order was issued to the effect that we were "not to ship wires except for paper machines for which there are only four or less wires per machine in the mill stock at the time of shipment." Paper mills were also informed of this fact, with the result that 90 per cent of the mills are holding up shipments on wires until they can find out what is involved in the ruling and until they can work out their wire needs.

Four wires represent a year's supply in one mill and only a month's

supply in another and with this basic fact before us, we can readily understand that a change will have to be made in this ruling to accomplish the results desired by the government in regard to conserving critical materials.

Suggested Procedure

● Therefore, with the drop-off in the paper industry, with the closing down of mills, with the confusion resulting from recent orders issued to the trade—it is difficult to say at this time just what the future holds in store for us.

These facts are pertinent:

1. The wire industry can supply the needs of the paper industry on a sensible basis.

2. The necessary raw materials to keep the industry supplied with wires will no doubt be allocated by the government when the facts are properly placed before them.

3. The paper industry should adopt a sensible schedule for purchasing its wire requirements so that better planning can be effected in the future than has been prevalent in the past.

Assuming that a two months' inventory might be considered a practical minimum inventory for the industry, we suggest the following procedure in regard to wires:

1. Every mill should determine its average life on each machine and establish the number of wires necessary for a two months' inventory.

2. They should reduce their inventory to this number of wires and maintain it on that basis.

3. They should place orders with their wire sources of supply for their next six months' requirements, so that proper scheduling and planning of their requirements can be made.

4. That definite shipping dates be specified against these wires to help plan their manufacture and delivery.

5. That each time a wire is taken out of stock and put on the machine, the wire manufacturer be notified to ship one wire and to put one wire in stock.

If the above procedure is followed, wire stocks in the mills will be held to a minimum, the wire man-

*Vice President and General Manager, Eastwood-Nealley Corporation, Belleville, N. J. Presented at the Twenty-Third Annual Convention of the American Pulp & Paper Mill Superintendents Association, Grand Rapids, Michigan, June 16-18th, 1942.

ufacturers will be able to definitely plan their raw material requirements with the government, helping the materials divisions to better plan their work in Washington, and to better schedule their allocations in regard to the needs for raw materials. The wire manufacturers will also be able to schedule their looms and they will be able to hold their inventories to a minimum in conformance with government regulations.

Conserving Wires

● In regard to conserving wires and making suggestions for improving their life, we believe the wire manufacturers for a great number of years have been outlining to the paper industry the best means for securing the maximum life from the wires supplied to them. Two recently published articles, we believe, cover the necessary information for the paper mills in this regard. The

one article was written by Gus Ostenson of Camas, Washington, and published in "Pacific Pulp & Paper Industry" of December, 1941. The second article has been published by TAPPI and was written by Mr. J. E. Goodwillie of the Beloit Iron Works. In these two articles, the paper mills will find sufficient information to follow to obtain the maximum life from their wires.

Wires have been a critical item in every paper mill for a hundred years. Every superintendent has given his utmost in ability to obtain the maximum life out of each wire run on his machines and therefore, we believe, it will be difficult to contribute much to the data on this subject, that has already been offered.

Whereas paper mills may have been considered wasteful in some directions with products that they used in the past, it can safely be said

that they have not been prodigal or wasteful in the use of their wires, and having reached the point where the law of diminishing returns becomes operative, no major suggestion can be made that would be helpful, other than that outlined above.

We hope that the explanation in regard to the wire situation as of today from the standpoint of materials has been clearly defined and that the suggestions referring to the two published articles on the life of Fourdrinier wires will be accepted as our contribution to the present problems concerning us in the emergency in which we find ourselves today. If we will all continue to conserve wires to the maximum and if we will plan our requirements on a more intelligent basis, we will be contributing to the war effort by conserving the critical materials so necessary in the war program.

Wire Life

by GUS OSTENSON*

WHEN one makes the statement to the paper maker that "we just lost a wire" it is about the most tragic news possible. Why? It means instant stoppage of production that is so important in times such as we are now having.

It means the loss of expensive equipment that not only results in loss of production but has a direct bearing on the cost of the finished product. Crews of men must be brought in to replace this vital part of the paper machine, and this again increases cost. There is the worry and concern of how the wire was "lost," and the necessity of correcting the fault so as not to have a recurrence of the same trouble.

Through excellent cooperation between the Technical, Operating and Purchasing departments, we have been able to make a working record of why wires are "lost." In the Shibley award winning paper, "The Measurement of Wire Wear and Wire Life," presented by Milton Franklin of our technical staff at Camas before the Pacific Section of TAPPI in Portland, October 8th, 1940, the causes for removal of 116

wires were reported as follows:

1. Seam failure, 10.
2. Cracks, edges and center, 40.
3. Holes, 27.
4. Damaged, 12.
5. Ridges, 5.
6. Special grades requiring certain wires, 5.
7. Reasons not recorded, 4.
8. Actual worn out, 13.

Through the work of our technical department, we were able to definitely determine the percentage of wear on each wire, as well as, a record of miles run per foot of wire.

A record is also kept of days, life and tons per wire.

We know, of course, when a wire has to be removed, but it is interesting to know whether or not we are getting normal or excessive wear—whether it is a hard or soft wire. These aspects readily show up in the percentage-of-wear figures.

Mr. Ostenson's paper was first published in the December, 1941 issue. It is reprinted here because of the increasing need for conserving fourdrinier wires.

Mr. Specht, in his paper given this month at the Superintendents' meeting in Grand Rapids, refers to Mr. Ostenson's practical suggestions for making wires last longer.

Now since we have accumulated the information on what happened to these 116 wires, it was necessary to change and improve conditions so as to have more wires in the worn out class. In order to do this, a day-by-day record on each individual wire was kept to show when wire was trimmed; if ridges appeared; whether they were inside or outside ridges, and from what source; whether the wire became pitted or bulged and the reason. This required a close scrutiny of each wire each day and also close inspection each time the machine was down for washup or a grade change.

Training Personnel

● The first step in cutting down the amount of wire damage is the proper training of personnel and provision of adequate supervision in installing new wires on the machine. A paper machine wire is so easily damaged that any undue pressure brought against it while in the process of being installed will cut short its life by many days. Machines without removable fourdriniers increase the hazard since the strongbacks, table rolls, shower pipes, savealls, etc., are sometimes dropped in handling and the wire damaged. At other times the men's shoulders and arms kink wire edges, later causing cracks. Care must be

*Paper Mill Superintendent, Crown Williamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington. Presented at the meeting of the Pacific Coast Division of the American Pulp & Paper Mill Superintendents Association, Seattle, Washington, December 6, 1941.

used in unrolling the wire and removing the poles so as to prevent kinks and wrinkles. Perfect alignment on the breast roll and couch must be made to insure a straight running wire. This, in turn, eases the job the guide has to do.

Assuming that the wire has been installed in A-1 condition, normal life can be expected unless something else happens—and I'm sure you will agree that it sometimes does happen.

Seam failure—very little can be accomplished at the mill on this item, but wire manufacturers are improving seams, and this trouble seems to be on the decline.

Cracks—any number of reasons cause cracks in the wire edge, and in spite of improvements, we do not seem to be able to eliminate all of them. Some of the reasons for cracks are:

1. Bending or kinking the edge while putting on the wire.
2. Chunks of grease from the table or wire roll bearing.
3. Excessive weight of deckle straps or improper spacing of rolls so straps rest on the wire with too much strain.
4. Water pressure against the edge of the wire when machine men are hosing the wire off.
5. Riding of dandy roll too hard on wire.

These are a few of the causes, but the best remedy is the periodical grinding of the breast roll, couch roll, wire carrying rolls, and even table rolls, since the edges of these rolls soon become high and put undue tension on the edge of the wire.

Holes—holes, like cracks, are a papermaker's curse. Although the causes are many, most holes are the result of wear on pits and bulges. These pits or bulges are caused from:

1. Improper screening or too many obstructions in head box allowing large and hard particles to pass under lump breaker roll or top couch.
2. Water containing large particles of sand and dirt either in shower water or make-up water.
3. Iron strongbacks, doctors, or truss rods where rust can accumulate and drop onto the wire.

To correct conditions that cause holes, it is necessary to eliminate all iron upon which there is a possibility of rust accumulating and dropping on the wire. This is particularly essential in regard to iron pipe

used either in shower or make-up system. We have found that after cleaning pipes on a machine equipped with iron pipe, pitting shows a decided increase, and on fine wires this pitting certainly reduces wire life.

Ridges—By proper doctoring of rolls, this can be pretty well controlled except for ridges caused from worn suction boxes, wax or size accumulation on boxes, leaky savealls, and burrs on table rolls or forming boards. While the most important rolls to be doctored are the first return roll or doctor roll after couch and the breast roll, the other rolls also should be equipped with doctors. Any number of doctor blade materials may be used depending on mill conditions. Among those used are hard rubber, soft rubber, micarta, eelslip, wood, and stainless steel. It is imperative that the doctor fit the roll perfectly in all instances. This means that a roll should be ground before installing a new doctor, but after a doctor has been fitted perfectly, it will run one, two, or three years before it will be necessary to renew it. Wire showers play an important part in lubricating doctors as well as cleaning the wire. Their position in relation to rolls and doctors is open for argument since successful operation is obtained from several positions.

Damaged Wires Major Problem

● Damaged wires are our biggest heartache. Among the causes we have experienced are: Wire guide failure, sheet following pickup felt, pickup or Harper felt wrinkling causing wrinkles in the wire, dropping equipment on the wire or in the headbox, wire roll bearing failure, bolts or nuts crystallizing and falling on to the wire off slice or fourdrinier, and even passers-by tossing apple cores into the wire instead of drain ditch. Then when you think that you have them all catalogued, something else will happen. To cut down damaged wires, it is necessary that everyone connected with the mill know how frail a wire is, particularly machine men and mechanics. Steel drillings or chips of concrete raise havoc with wires in a very short time. It would pay to change bolts and screws in the head box, slice and fourdrinier periodically before they break and fall into wire due to crystallization.

It is sometimes necessary to remove wires due to the necessity of manufacturing special grades. That is, a wire which might have been run for considerably longer time on a medium or heavy weight paper will

not allow efficient production on a light weight tissue or a highly hydrated sheet; hence it must be removed.

Since paper machines are of such a variable nature, being different mechanically and making different grades under different conditions, it is impossible to compare wires on one machine with those of another machine. Comparisons should be made, instead, between wires on the same machine.

Wire manufacturers have improved their wire construction in the past few years so that it is now possible to run twill-weave or long-crimp type weave on almost all grades. This in itself contributes to longer wire life. In addition, seams on this type of wire have improved generally.

Due to higher speeds and improved quality, wires must be better. A small hole or a ridged wire that may have given several more days life in the past must now be removed. Paper machine conditions must also keep pace; rolls must be balanced for higher speeds, doctors must fit better, dandy rolls have to be truer, and cleaning showers must be of improved design and type.

Since wires are made from a vital defense material, it behooves us all to do everything possible to improve wire life. With paper becoming more and more vital to defense needs, we must weigh the problem carefully so as to maintain good production and still get good wire life.

Roy Miller Returns To Camas Mill

● Roy Miller, shop supervisor, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, returned from one year's studies at Massachusetts Institute of Technology at Cambridge, Massachusetts, late in May. He was one of the eleven national recipients of the Alfred P. Sloan Fellowship for 1941.

Mr. Miller graduated from the Crown Willamette Paper School in 1939 and afterward served as a faculty member.

Buff Natwick's Daughter Receives Music Degree

● Miss Phyllis Natwick, daughter of Mr. and Mrs. A. G. Natwick of Camas, Washington, received a Bachelor of Music degree from the Ellison-White Conservatory of Music in Portland, Oregon, June 14th. A. G. Natwick is assistant resident manager, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington.

Miss Natwick is the first student to receive a degree from the conservatory, which is a fully accredited school of higher education and the only institution of its kind in the Northwest.

A. H. B. Jordan Dies In Everett

President of the Everett Pulp & Paper Company, the Sumner Iron Works Company and long active in public affairs, Mr. Jordan passed at the age of 76.

● A. H. B. Jordan, for years one of the most prominent figures in Everett's industrial life as well as a leader in political circles, died at an Everett hospital early Sunday, May 31st. President of the Everett Pulp and Paper Company, president of the Sumner Iron Works, and a director of the First National Bank, Mr. Jordan was for years one of the most energetic business and community builders in the state.

Born in Boston, Mass., September 23, 1865, Mr. Jordan could trace his ancestry in America back to 1639 when the Rev. Robert Jordan arrived from England to found the family here. Educated in the grammar and high school of Boston, Mr. Jordan began his business career as a boy of 16. At that age he entered a wood pulp company to serve three years apprenticeship. He was associated with the Champlain Fibre Company at Willsboro, N. Y. After four years there he resigned to take charge of the Clarion mills at Johnstown, Pa., continuing there as superintendent until 1895, when he came to the Pacific Northwest and settled in Everett.

Together with the late William Howarth, Mr. Jordan took over the pulp mill at Lowell and the Everett Pulp and Paper Company came into existence. William Howarth became president and Mr. Jordan assumed the positions of first vice president and general manager. Leonard Howarth was second vice president. Under their leadership the Everett Pulp and Paper Company became one of the most productive industries in the state.

The activities of Mr. Jordan, with the acquisition of the pulp and paper mill, just started. He took a deep interest in everything affecting the commercial, industrial and civic development, not only of Everett, but of the entire state.

For six years, from 1905 through 1910 Mr. Jordan was one of Snohomish county's commissioners. He was also honored by numerous delegations to state and national conventions.

When Governor Roland H. Hartley reorganized the board of regents of the University of Washington he selected Mr. Jordan as

one of the members. He was immediately elected president of the board.

In addition to his other business interests, Mr. Jordan has served as president of the Everett Ice Company and of the Jordan Finance Company. The needs of his community always found an interest in Mr. Jordan who turned his ability for organizing toward creating those things which were needed but did not exist.

Despite his many business interests, Mr. Jordan found time for other affairs. He was active in the organization of the Everett Commercial Club, the Cascade Club and the Everett Golf and Country Club. He was a member of the Elks' Lodge, the Scottish Rite and Peninsular lodge, F. & A. M., the Scottish Rite and Nile Temple of the Shrine.

Rose Croix Masonic funeral services for Mr. Jordan were held Tuesday afternoon at 5 o'clock at the First Presbyterian Church, The Rev. G. G. Goldthwaite officiating. His body was sent east for interment at Brookline, Mass., on June 13th. Mr. Jordan is survived by relatives in the East, among whom is Mr. Augustus Paine, chairman of the New York & Pennsylvania Co., New York City.

Estate Left to Hospitals

● Mr. Jordan willed the greater part of his estate to the Seattle Orthopedic Hospital, according to a news dispatch appearing in the Seattle Times, June 14th. Quoting from the dispatch:

"The Seattle Orthopedic Hospital's share of the late A. H. B. Jordan's fortune cannot be determined until the estimated \$1,250,000 estate is settled, which is expected to take at least a year, hospital officials learned yesterday.

"Mr. Jordan, president of the Everett Pulp & Paper Company and one of the founders of the Everett General Hospital, had long been interested in the work of the Seattle hospital. His bequest of the major part of his fortune to the organization came as a complete surprise to the hospital's financial and govern-

ing boards, however, as he never before had made any donations to the hospital.

"After various deductions, the estate will be held in trust for not less than 20 or more than 30 years. At the end of that period, the Everett General Hospital will receive \$200,000, the Deaconess Children's Home in Everett, \$75,000, and the Seattle Orthopedic Hospital the remainder. The three beneficiaries also will receive a share of the estate's yearly income."

Port Angeles Rayonier Men Receive Service Pins

● Port Angeles Division of Rayonier Incorporated presented service pins to approximately 80 employees at a recent dinner meeting in the Peninsula Golf Club house at Port Angeles, Wash.

W. E. Breitenbach, resident manager, presided and made the presentations, as follows:

Ten-year pins, Max F. Ainsworth, Russell H. Bayton, Henry V. Charnell, Fred T. Dangerfield, Vasil V. Decker, Joseph F. Desler, Julien V. Driessche, Frank Dunmire, Fred Egan, Alex H. Fraser, Ervin L. Gilbertson, Floyd Gossard, Edward Hagan, Henry Hendrickson, John C. Holman, Harry R. Irons, Conrad P. Kvale, Arthur Lager, Otto E. Larson, Walter S. Libby, Julius S. Lindberg, Joseph Mariani, Harry Moore, Erling C. Myhre, Kenneth S. Reid, Frank E. Robideau, Arthur Rollin, Myron A. Scott, Felton J. Sharnbroich, Guy Somers, Merton W. Sturdevant, William L. Taber, Vernie E. White and E. H. Woodruff.

Five-year pins, Conrad A. Anderson, Fred T. Atkinson, A. E. Austin, Chester D. Bombardier, H. G. Bunnell, Harry L. Chapman, Warren O. Denby, Elgin W. Edmisten, Jack Farrington, Karl H. Fast, Robert W. Forrest, Elmer K. Galloway, N. H. Gillette, Theodore Hansen, Archie B. Helgeson, Gordon L. Holman, E. A. Howatt, Chester R. Hughes, Milton E. Johnston, Ben K. Kingsley, J. F. Larsen, Cecil E. Libby, David E. Lophthien.

Leo P. Lynch, Emil Matson, A. H. Matthews, Ernest B. Middleton, Milton H. Monpas, Francis A. Nansen, Harold M. Orem, Clarence A. Parr, Peter N. Peterson, Omar M. Radklev, James M. Reagin, Frederick E. Regal, H. E. Sherman, Carl F. Startup, Ralph W. Stone, V. A. Swanson, Walter W. Tinkham, Ernest H. Wagner, Sam Wilson, Frank J. Wonder Jr., Robert W. Ween and George W. Zimmer.

Outline of Slime Control

by O. L. HUDRLIK*

MODERN paper mills are designed with an aim toward higher operating speeds and increased rate of production with no increase in the amount of equipment or size of the mill. It is therefore increasingly important that all equipment function at its highest possible overall efficiency, and with a minimum amount of time loss because of slime formation. The increased use of paper for food containers makes it necessary to maintain more sterile conditions in paper mills.

Slime is caused by growth of micro-organisms. The slime-forming organisms may be classified in three groups:

1. Coliform bacteria and other non-spore forming bacteria.

2. Spore bearing bacteria.

3. Fungi—Yeasts and Molds.

Coliform bacteria form loose, voluminous and bulky slimes. However, this is the most easily controlled group. They are found mostly in groundwood and board mills, and come largely from water supplies. The most common are *Aerobacter Aerogenes*, *Aerobacter Cloacae*, *Escherichia Coli*, *Achromobacter* and *Flavobacterium* species. *Actinomyces* is usually considered, for practical purposes, with the fungus types.

The spore bearing types form tough, ropy, rubbery and leathery slimes. These are considerably more resistant to chemical action and heat than the former group. They gain entrance to the mill through water supplies, dirt and wood. They are found in all types of pulp, but because of their resistance to chlorine, they are found to be the main offender in bleached sulphite mills. In the Pacific Northwest, a higher proportion of spore formers was found than throughout the other mills in the country. The most common of these include *B. Subtilis* group, *B. Mesentericus*, *B. Vulgatus* group, *B. Megatherium* and *B. Mycoides*.

Fungi are somewhat different from bacteria in that they have a longer life cycle and are more complex organisms in general. They form tough leathery and rubbery slimes, and *Aspergillus* forms the well

known "Tapioca" slime. Besides forming slime, some decompose pulp, some cause odors, and some have all of these characteristics. Because of these varied characteristics, they cannot be treated with any one chemical, and a number of chemicals may be needed to control a severe condition. Some of the common types are *Oidium*, *Trichoderma*, *Aspergillus*, *Cladosporium*, *Penicillium* and *Monilia*.

In checking 189 different slime samples, only 30 were reported to be practically pure strains and of these, 22 had additional kinds of organisms. The following table shows the frequency with which the more common organisms were encountered:

<i>Aerobacter Aerogenes</i>	55%
<i>Achromobacter</i> , sp.	16%
<i>Escherichia Coli</i>	12%
<i>Actinomyces</i> , sp.	10%
<i>B. Subtilis</i>	20%
Other spore formers	19%
<i>Oidium</i> , sp.	38%
<i>Aspergillus</i> , sp.	29%
<i>Trichoderma</i> , sp.	24%
<i>Penicillium</i> , sp.	21%
<i>Torulae</i> , sp.	5%

The fact that a system has been inoculated will not cause slime. It is necessary that the organisms propagate in this system. Some of the most important conditions for growth are as noted:

1. There must be an adequate food supply in a form readily assimilated by the organisms.

2. The presence of moisture is essential with all types.

3. Practically all slime forming micro-organisms require some oxygen.

4. The temperature must be favorable for growth. In general, temperatures between 65 and 100 F. are most suitable for growth. Each species has its own optimum temperature, and any variation in either direction will reduce growth. If the temperature is raised to 140 F. many varieties are killed. Many of the spore formers, and some of the molds, however, are unaffected by this or even higher temperatures.

5. Chemical environment—the best pH for growth is between 6.0 and 8.0. Some molds grow at pH as low as 2.0. Here again conditions with each species vary considerably. For optimum growth toxic agents must be absent.

6. Light and radiation. Most micro-organisms prefer subdued light or darkness. Sunlight, which will kill bacteria, is necessary only for algae, which occur only rarely in slime.

7. Time. One of the most important factors in growth of micro-organisms is time. Some bacteria will double their number in 15 minutes with other conditions satisfactory. Yeasts and molds require much longer times, but they increase by thousands.

Mechanical Control

● From the foregoing, some of the steps in slime control are already apparent. In general, knowing the ideal condition for slime growth, the growth can be reduced by varying these conditions as far as practical from the ideal. The food supply can be reduced by more careful and uniform washing of chemical pulps. The use of electrical conductivity instruments aids greatly in obtaining uniform and complete washing. Moisture and oxygen content are obviously beyond control. pH and temperature can be changed only slightly.

Time has a tremendous effect on slime growth, and the time element can be varied considerably in many mills, with very desirable results in slime control. When it is considered that under suitable conditions, bacteria can be reduced 50% by reducing the retention time of the pulp 15 minutes, it is obvious what effect unnecessarily long or oversize flumes and pipe lines may have. White water tanks in many cases have a retention time of hours. If this were reduced to a fraction of that time, the fresh water requirements would be only slightly increased, and the slime control would be greatly improved.

Dead spots, recesses and sharp corners should be studiously avoided because the bacteria content in many of these has been found to be ten and even a hundred times as high as in the main part of the system. Rough surfaces provide a slower flow where bacteria can adhere and grow, and it is evident that these should be eliminated as much as possible.

The importance of thorough cleaning cannot be over emphasized. This may be likened to the motorist who changed oil regularly each

*Northwest Service Manager, Portland, Oregon, The Flox Company, Minneapolis, Minn. Presented at the Joint Meeting of the Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp and Paper Mill Superintendents Association, Portland Hotel, Portland, Oregon, June 3-6th, 1942.

thousand miles, and changed the oil filter only each ten thousand miles. The difference is that the dirt in his oil filter did not double its quantity each 15 minutes as the bacteria in a white water system can do.

Pulp and paper mill designers are realizing the importance of these conditions, and are calculating the sizes of the equipment more closely and accurately than previously. They design chests with glazed tile lining, and flumes with streamlined sides. In many cases, wood used in construction of pipes and flumes is treated before being fabricated. This is an important advantage because tests have shown bacteria which has grown to a depth of one-fourth inch into sound wood. If this condition exists, there is a perennial source of contamination for slime forming bacteria.

Chemical Control

● Chemical control should begin with the fresh water. A good coagulation and filtration plant will remove by filtration as much as 95% of the bacteria in the entering water. The remainder can be more easily killed by the sterilizing and oxidizing action of chlorine. Because of the low cost of chlorine, and the low bacteria count per cubic centimeter of fresh water, it is easily apparent that sterilization of the fresh water with chlorine or chloramine promises very worthwhile results in slime control.

The two common terms in slime control are "Killing" and "Inhibiting." A "Killing" dosage of chemical is the amount actually required to effect a sterile condition. A much lower dosage is required to prevent growth or propagation. This is referred to as the "Inhibiting" dose. In paper mill work, inhibiting dosages are used almost entirely, because with most chemicals it would be uneconomical and impractical to use a killing dose. With an inhibiting dose, growth is stopped, and the micro-organisms are gradually removed in the paper and plant effluent. However, they are seldom entirely removed from the system, and if treatment is stopped or reduced below the point where growth is inhibited, the micro-organisms come to life and begin to form slime. Old slime can be eliminated because no new is formed and the old dies a natural death. Because of the many sources of contamination and the ideal conditions existing in a paper mill for slime growth, it is practically impossible to sterilize a system completely.

Chlorine has been used widely in

slime control, alone and with ammonia. In fresh water this method has no equal, since the organic content is quite low. The full effect of the oxidizing and sterilizing of the chlorine can be brought to bear on the micro-organisms with more effective results than at any other point in the system. A large portion of the organisms in raw water are of the coliform type, on which chlorine is very effective at low dosages. In a paper mill, there is such an abundance of organic material present that the chlorine, even in the presence of ammonia is rapidly reacted upon, and removed. Ammonia is rather corrosive to all metals and alloys containing copper.

Copper sulphate is used mostly for Algae and Fungi. It is also corrosive if used in a paper mill for any length of time, and unless used with caution may cause pulp discoloration. The best use of copper sulfate is as a strong solution in cleaning equipment. The longer the contact period, the better, and circulation of the solution is highly desirable.

Mercury compounds have been used successfully in some cases, although they are rather expensive. On some types of micro-organisms these are very effective at low dosages. Careful control is necessary because a dosage which is too low will stimulate growth, instead of inhibiting or controlling it.

Chlorophenates are combinations of chlorine and phenols. These combine the toxic effect of both chemicals, and remain stable in the white water system over long periods of time and under a wide range of conditions. Chlorophenates therefore can be permitted to concentrate and remain effective throughout the mill. Inhibiting dosages are more uniform throughout the range of commonly occurring micro-organisms. Quite a number of these are commercially available. Among those commonly used are Sodium Pentachlorophenate, Sodium Tetrachlorophenate, and Sodium 2-Chlorophenylphenate. The choice of a suitable chlorophenate is made after identification of the slime forming organisms. The type of stock and mill must also be considered.

Since the sodium salts of chlorophenols are soluble in water, and the chlorophenols themselves are relatively insoluble, these materials may be precipitated on the stock for mold-proofing. However, in many cases, maintaining sanitary conditions in the mill by correct slime treatment reduces the mold count

sufficiently so that no direct mold treatment is needed.

One of the most important features in slime control is the method of application of chemicals so that the sources of contamination are controlled. A bacteriological survey is a sure way to find where best to apply the treatment. The next best method is to go by experience and visual examination of the mill in question. Most superintendents and chemists are familiar enough with the peculiarities of their mill that if they are given an idea of the characteristics of slime control chemicals, they can generally select the best points of application with little assistance.

Summary

In summary, successful slime control depends on:

1. Identification and counts of micro-organisms present.
2. Choice of treatment.
3. Determination of proper points of application.
4. Continuous supervision of application, observation of results, and control of chemical.
5. Elimination of sources of pollution, and dead spots.
6. Sanitation throughout the mill.

With this program, conditions can be controlled to a point where spotting, breaks, cleaning are minimized, and production can be maintained at a maximum.

Merton Johnson In Hawley Machine Room

● Merton Johnson, son of Jack Johnson, who represents Appleton Woolen Mills, returned to Hawley Pulp and Paper Company on June 1st, where he is now working in the machine room. Merton Johnson has been working on a paper machine at Southland Paper Mills Inc., Lufkin, Texas.

Enghouse Assistant to Manager At West Linn

● Clarence A. Enghouse was promoted to the position of assistant to the resident manager, Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, West Linn, Oregon, effective June 1st.

Mr. Enghouse is a graduate of Oregon State College, where he majored in mechanical engineering, receiving his degree in 1924. During that same year he went to work for Crown Willamette Paper Company at the West Linn plant testing paper. In 1927 he became technical supervisor at the mill and has continued in this capacity until his current advancement. He also continues as head of the technical department of the plant.

Mr. Enghouse has been active in the Crown Willamette Paper School. He is assistant professor of the first year class and vice principal of the paper school. He has held the latter position since 1938.

One Common Goal

★ ★ ★ ★ ★ ★ ★ ★ ★

As war conditions place an increasingly heavier strain on our Industrial Front, civilian curtailments and restrictions are inevitable.

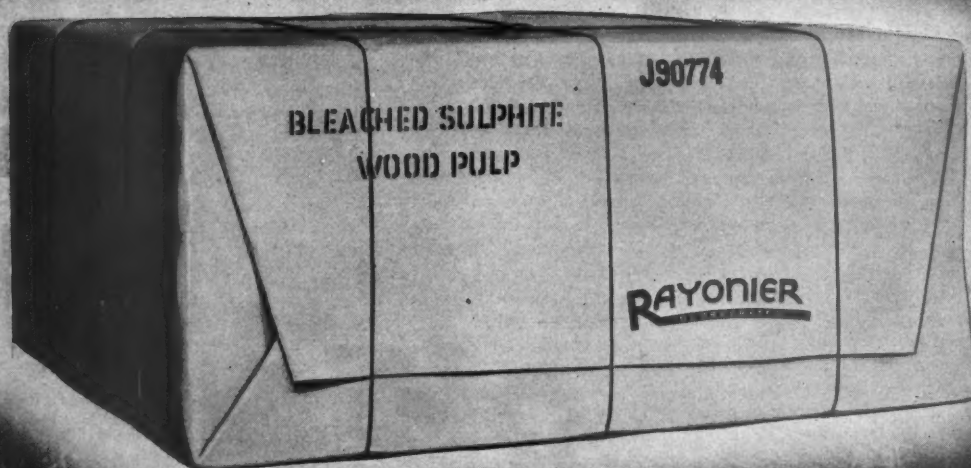
In the difficult days ahead it will be necessary for producers and consumers to bear in mind that no inconveniences or sacrifices are too great to achieve the one common goal — Victory.

RAYONIER
INCORPORATED

Better Pulps for Better Performance

Mills: Hoquiam, Port Angeles, Shelton, Tacoma, Wash. and
Fernandina, Fla. • Executive Offices: 343 Sansome Street,
San Francisco • Sales: 122 East 42nd Street, New York

★ ★ ★ ★ ★ ★ ★ ★ ★



Camas Paying Suggestion Awards In War Bonds and Stamps

● War Bonds and stamps are now used as payment to employees of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, for prize winning suggestions made for improvement of plant operation. Regarding the award system resident manager J. E. Hanny says, "It is the earnest hope of the management that our employees will be more active than ever before in sending in suggestions. Every award that is made under this plan means that the employee is helping his country, himself and his company."

At the foremen's meeting June 11th at the Camas plant the following awards were made in War Bonds and stamps:

C. B. O'Dell, \$31.90 for suggestion for spray cleaning device on machines for cleaning dryer frames;

Rex Brown, \$15.00, for suggestion to substitute V-belt for flat belt drive on Lodge and Shipley lathe;

B. E. Crippen, \$8.00, suggestion for using pallet board packing for can kraft paper;

W. E. Wegner, \$5.50, suggestion that screens for Brithis sheet machine in laboratory be replaced at Camas;

Alvin Doyle, \$5.00, suggestion that separate screen be used for wax size at the beaters.

These prizes were presented by George Charters, assistant resident manager. Each recipient had previously been awarded a \$2.00 prize upon adoption of the suggestion. The current awards are based on savings resulting from the use of the idea, or the worth while improvements in operation.

Mrs. Palm Honored By Advertising Club

● Mrs. Glory Palm of the advertising department, Zellerbach Paper Company, San Francisco, has been honored by being elected to the secretaryship of the San Francisco Advertising Club. Mrs. Palm is going to attend the annual convention of the Pacific Advertising Club Association at Rainier National Park in June. From there she will go east and visit a number of paper mills.

Lieutenant Letson Reported Missing

● Listed among the missing in a recent U. S. Navy casualty list was Lt. (jg) Charles Francis Letson, naval reserve, former assistant chemist at the Port Angeles, Wash., division of Fibreboard Products Inc. Lt. Letson was connected with the mill from 1931 until 1937, when he went to Tacoma. For a time he was commanding officer of a naval communications reserve unit at Port Angeles.

Hosfeldt a Very Proud Grandfather

● Arthur D. Hosfeldt, sales manager, Hawley Pulp and Paper Company, Oregon City, Oregon, became a grandfather on May 29th, when his daughter, Mrs. Lester Steers, gave birth to a 9¼-pound baby boy at the Wilcox Memorial Hospital in Portland. The father, Lester Steers, is renowned as the world's champion high jumper.

Son, mother, father and grandfather are all said to be doing well.

San Francisco Jobbers Plan Cooperative Deliveries

● A cooperative delivery program designed to conserve the trucking facilities of San Francisco's paper houses was recently submitted to the Office of Defense Transportation.

The program was developed by a special committee of paper and sanitary supply dealers of San Francisco consisting of J. A. Gruner, Chairman, Blake, Moffitt & Towne; T. A. Leddy, Zellerbach Paper Company; S. S. Hockwald, Hockwald Chemical Company and H. S. Bonestell, Jr., Bonestell & Company. Mr. Gruner

announced that the program was endorsed by the heads of nineteen paper houses in San Francisco and that it will be put into effect as soon as approved.

Tipka Returns To Work At Hawley

● V. L. Tipka returned to his former job of Research Engineer for Hawley Pulp and Paper Company, Oregon City, Oregon, on June 1st, after having served for six months as superintendent of the Pacific Coast Chemical Processing Company, Aberdeen, Washington. He was granted a 60-day leave from the paper company in April.

Longview Fibre Employees 100% War Bond Buyers

9.86% of large Longview plant's payroll now being deducted for War Bond purchases.

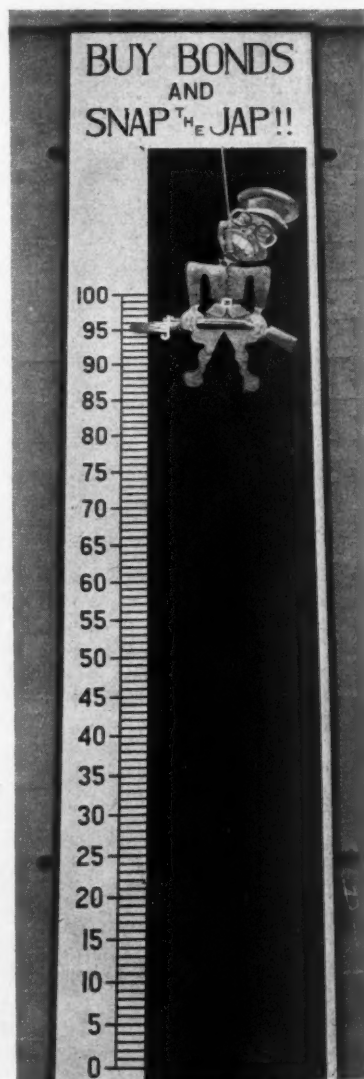
● Every man and woman working in the large Longview Fibre Company's kraft paper, board and converting operations in Longview, Washington, is now buying War Bonds through payroll deductions. Although the payroll deduction plan has been in operation for the past four months a special drive was started June 5th to sign every one up. The pulp and paper union locals and the mill management cooperated, and in four days had raised the percentage of the employees subscribing from 17 to 95 per cent. By June 13th, one week later, 100 per cent were signed up.

The payroll deductions for War Bond buying now amount to 9.86 per cent of the total payroll, practically the 10 per cent asked for by the Federal Government.

Interest in the drive was enhanced by the unique marker shown in the accompanying photograph. The bayonet of a Japanese soldier hanging by the neck indicated the percentage of the employees buying bonds through payroll deductions.

Hawley Installs Saw To Cut Large Diameter Logs

● Hawley Pulp and Paper Company, Oregon City, Oregon, has installed a saw on their log pond for cutting large logs lengthwise. In the past the logs that were too large to be accommodated by the circular saw in the mill have been tied up in the pond and have accumulated because the sawmill equipment would not handle them. Now the company is cutting these logs into two to four pieces, so they can be run through the wood mill to be manufactured into paper.



Port Townsend Men Receive First Aid Certificates

Dinner held May 13th honored 46 men upon completion of First Aid Course.

● The men and women working in the Port Townsend Division mill of Crown Zellerbach Corporation have shown a very great interest in first aid training in recent months.

On April 30th a class of 35 received certificates upon completing the Bureau of Mines standard first aid course. These were presented at a dinner given by the company.

A group of supervisory employees completed the course early in May and were awarded certificates at a dinner held on May 13th. Another class, made up largely of wives of men employed at the mill, completed the course at the same time. Two other groups finished up the middle of June.

At the May 13th dinner, E. W. Erickson, resident manager, presided in the absence of F. L. Ziel, assistant resident manager, who was ill. Mr. Erickson told of his own experiences in taking first aid which brought laughs from the men.

He introduced Otto R. Hartwig, general safety supervisor, Crown Zellerbach Corporation and Rayonier Incorporated, who told the men that there are today more first aid trained persons in the two organizations than there were in all the city of London when war broke out. Mr. Hartwig congratulated the men upon completing the course and emphasized that a first aid trained man or woman is a safer worker.

Safety is essential today, he said, if we are to put forth our maximum effort to win the war. Last year 24 million man hours were lost to industry through accidents. If these lost hours were assigned to workmen on an 8-hour day basis and the men were placed in fully manned shipyards, the yards would stretch, side by side, from Bonneville Dam to Portland. Portland would be a city of 3,000,000 people.

"While I hope you men are never called upon to use your first aid training," said Mr. Hartwig, "if you are, you will be proud you can help in an emergency, and you will then realize how much you have really learned." The importance of avoiding accidents cannot be over-emphasized, he told the men. Some have to learn by hard knocks, others can learn through the examples given in first aid and safety work. Mr. Hartwig told how first aid training is often used in unexpected ways. He described the experience of the Cathlamet farmer who had driven 18 miles every night for five nights to take a Crown Zellerbach course at the sawmill there. This farmer had a fine bull. He sent for a veterinary to remove the horns. After the veterinary had finished the operation and had left, the farmer discovered the bull on his knees, weak from the loss of blood. An artery had accidentally been cut. Applying pressure as learned in first aid, he stopped the flow of blood until help arrived. The expensive bull's life was saved.

Mr. Hartwig awarded Industrial Safety Engineering Certificates given by the United States Department of Education in cooperation with Oregon State College upon the completion of a recent

course in Engineering Defense Training in Portland, to F. L. Ziel, Bernard T. Mullaney, and to Maxwell Loomis.

Fred Pontin, first aid instructor for Crown Zellerbach Corporation and Rayonier Incorporated, remarked that if through safer working we can reduce lost man hours by one-half, we will have travelled a long way toward speeding up our War Program. Some men, he said, think safety is the bunk. But the men who have taken first aid know that it isn't. It is up to those who know to convince the doubters that safety really pays each of us.

Mr. Pontin awarded the Crown Zellerbach Standard First Aid Course Certificates, which are good for one year. The course is approved by the Department of Labor & Industries, State of Washington.

He then introduced the instructors, E. C. Moar and Harley Knott.

The following men received the certificates: Chet Gillett, Ed Butler, Fred Teitzel, Jack Purdy, L. Shaffer, Murray Young, Grant Coster, E. V. Sullivan, M. Goforth.

M. Kiesel, John Olsen, Frank Burns,

Robert Webb Receives 35-Year Crown Willamette Pin

● On the evening of April 8, 1942, in Harlingen, Texas, a surprise banquet was given in honor of Mr. Robert Webb, plant superintendent of the Crown Willamette Paper Company of Texas.

Present on the occasion were Mr. G. J. Ticoulat, sales manager of the Crown Willamette Paper Company, San Francisco, and Mr. W. D. Welsh from the executive offices of Crown Zellerbach

R. Rentschlar, M. Loomis, C. Hoaglin, Robert McHugh, C. Maulding, Wm. Loving, Bert Tuttle (Loving and Tuttle completed advanced course), Don Moore, Cecil Gupta, George Grenbemer, Dan Hill, John Woodworth, Harry Pollard, Wendell Redding, W. L. Campbell, Beverly Smith, William Trager.

Clyde Boggs, P. C. Bishop, Glen Gillett, Sam Luck, Harlow Lemere, Myron Bishop, W. Schuman, George Skinner, N. A. Whitnack, Frank Miller, Carl Erickson, I. Lehman, James Eagan, Homer Moss, Fred Simcoe, I. Larsen and Nels Kjellin.

E. C. Moar, first aid instructor whose mill work is spare machine tender, conducted a 20-hour class for the Supply Unit of the Civilian Defense Council of Port Townsend, and the following members of the unit qualified for their certificates on May 13th: Mrs. Jack Hearing, Mrs. Oscar Hetzel, Mrs. Thomas Geddes, Charles Keithann, Mrs. Anna Norby, Mrs. Paul Richardson, Mrs. Lindgren, Nellie C. Olson, Mrs. Doris Gilbert, Oscar Hetzell.

Mrs. Leo Ziel, Walter Johnson, Mrs. Deville Lewis, Florence Nederlee, Mrs. Hazel Shortley, Gertrude Verrier, Mrs. Wm. Trager, Wm. Hopper, Gar. Eastman, Mrs. L. A. Scott, Helen Wishart, Mrs. Sam Luck and Mrs. Fred Lewis.

In April E. C. Moar and Harley Knott (mill pipefitter) finished instructing the Port Townsend Active Club, and the first of May Mr. Moar began instructing a class from the Port Townsend Fire Department.

Corporation, San Francisco—both making the trip to Harlingen for the express purpose of officiating in the thirty-five year service pin presentation to Mr. Webb.

In the thirty-five years that he has been associated with Crown Willamette Paper Company, Mr. Webb has printed fruit wraps all the way from Camas, Washington, to Sanford, Florida. He holds the unique distinction of being the only fruit tissue printer of the corporation who has worked, at one time or another, at all the fruit wrapper operations within the company.



CROWN WILLAMETTE MAN RECEIVES SERVICE PIN at HARLINGEN, TEXAS , , , **ROBERT WEBB**, Plant Superintendent of the Harlingen fruit wrap printing plant, received his 35-Year Pin from **G. J. TICOULAT**, Sales Manager, Crown Willamette Paper Co., Division of Crown Zellerbach Corp., San Francisco, while **J. W. LINEHAN, Jr.**, Resident Manager at Harlingen (left) looks on with **W. D. WELSH** of the San Francisco Executive Offices (right).

Harlingen, located in the southeast tip of Texas, is in the heart of the Texas citrus fruit country and is about 30 miles west of the Gulf of Mexico and 20 miles north of the Rio Grande.

Darnell Heads Yakima Rotary Club

● Newly elected president of the Yakima Rotary Club is Jack Darnell, manager of Blake, Moffitt & Towne's Yakima office. Mr. Darnell, an untiring worker, is well known for his efforts in the development of the Club's "Crippled Children" fund and his election emphasizes the importance the Rotarians attach to this work.

A graduate of the University of Washington, he came to Blake, Moffitt & Towne in 1920. Mr. Darnell is an active participant in civic affairs and has served as a colonel in the Community Chest since 1930. At present he is committee chairman of the Yakima Chamber of Commerce and a board member of the Yakima Valley Credit Association.

Rod Crosby Joins Navy

● Roderick M. Crosby, registrar, Crown Willamette Paper School and of the

sample department of Crown Willamette Paper Company, Division of Crown Zellerbach Corporation, Camas, Washington, joined the United States Navy on June 2nd, as second class pharmacist. The regents and faculty of the paper school gave a farewell party for Mr. Crosby on May 29th. At that time he was presented with a gift fountain pen and pencil set by the sponsors of the party.

Mr. Crosby started work at the Camas plant during 1936, in the technical control department, and has been quite active in the paper school, having served as registrar throughout the past school year. He is a graduate of Hill Military Academy of Portland and attended the School of Pharmacy, Oregon State College. Later he worked at the Fir-Tex plant at St. Helens and later in St. Helens Pulp and Paper Company control department, where he stayed for two years.

Crosby is a member of the naval reserves and went directly to Bremerton.

Clarence A. Anderson, wood technologist, has temporarily taken over the registrar's duties.

Paper Import Cases Suspended for Duration

● Many cases now pending in the United States Customs Courts involving the dutiability of paper imported from Japan are being suspended, by request of the importers, for the duration of the war according to the Import Committee of the American Paper Industry. The suspensions have been granted, and no action will be taken until the cases are again placed on Customs Court calendars.

Meantime, all duties levied by Customs officials have been paid, and when the cases come again to the court the issue will be whether or not portions of the duty already paid shall be refunded. The imports from countries with which we are at war could be dismissed by the courts on the ground that representatives of enemy country producers have no standing in United States Courts.



PORT TOWNSEND FIRST AID DINNER, May 13th. Forty-six men received certificates upon the completion of the standard first aid course. In the lower right hand picture, left to right, OTTO R. HARTWIG, General Safety Supervisor, Crown Zellerbach Corp., and Rayonier Incorporated; E. W. ERICKSON, Resident Manager, Port Townsend Division, Crown Zellerbach Corp.; FRED PONTIN, First Aid Instructor, Crown Zellerbach and Rayonier; and STEVE CONEY, Personnel and Safety Supervisor, Port Townsend Division.

PAPER . . . America's

6th

Industry



MUNITIONS . . . AND WOOD PULP

(NEWS ITEM: More than 125,000 tons of Wood Pulp will be requisitioned by the government this year for the manufacture of nitrated cellulose explosives.)

Wood Pulp is rapidly becoming the primary source of cellulose for munitions—one of the many new uses for paper in the Victory program.

War requirements, direct or indirect, are claiming 52 per cent of the total production of container board, 43 per cent of paper board, 80 per cent of building paper, 20 per cent of kraft wrapping paper.

The U. S. Government Printing office alone is using more than 100,000 tons of paper a year, of which almost three-fourths is directly tied up with America's war effort.

How paper production can be speeded up to meet war-time needs is the 24-hour a day concern of PuseyJones engineers.

A recent development is the PuseyJones Simplex Press Arrangement, which meets the urgent need for increased tonnage with existing machines. Incorporated in the design is the latest type of controlled pneumatic loading, a simplified time-saving arrangement for installing felts and an independent draw adjustment between the several presses.

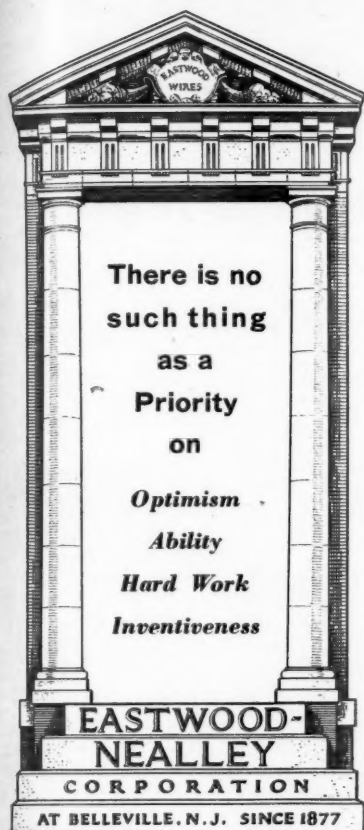
The PuseyJones Simplex Press Arrangement considerably reduces the space occupied by the Press part and thus allows for the installation of additional dryers to speed up production.

Keeping paper production at the point of highest efficiency is not only essential to Victory, but also best for the tremendous competition coming after the present emergency is over.

THE PUSEY AND JONES CORPORATION

Established 1848. Builders of Paper-Making Machinery
Wilmington, Delaware, U. S. A.





Longview Fibre Expands Offices

• A modern addition to the Longview Fibre Company office at Longview, Washington, was completed the first of April. R. S. Wertheimer, vice president and resident manager, and Carl Fahlstrom, assistant resident manager, now have their offices in the new quarters.

Louis Colton Attends Purchasing Agents' Meeting

• Louis A. Colton, vice-president of the Zellerbach Paper Company, San Francisco, attended the annual convention of the National Association of Purchasing Agents in New York.

Western Wax Employees Receive First Aid Certificates

• Western Waxed Paper Company, Division of Crown Zellerbach Corporation, Portland, Oregon, presented first aid certificates to thirty employees and ten non-employees at a dinner April 28th at the Columbia Edgewater Country Club. The certificates were awarded as recognition of satisfactory completion of the standard first aid course, which was given by the paper company.

Otto Hartwig, social security and general safety supervisor for Crown Zellerbach Corporation and Rayonier Incorporated, pointed out the importance of first aid training at the present time. He also mentioned that Rayonier Incorporated and Crown Zellerbach Corporation together have more first aid trained employees in their firms than there were in the city of London at the outbreak of the present war.

Mr. Hartwig said that first aid training is an excellent background for safety work. Statistical data indicates that the first aid trained employee is a better and safer workman. This is the time, as never before, for wholesale conservation of human life.

In conclusion Mr. Hartwig expressed his appreciation to the management and participants for the opportunity and success of the training program recently concluded.

Miles Murray, assistant to the general safety and social security supervisor, Crown Zellerbach Corporation and Rayonier Incorporated, made the observation that some 4,000 employees of the two companies have completed the standard first aid course. He says the fellow workers and the families of the trained employees have received vital emergency administrations at the hands of the persons who have been trained in the company first aid courses. There have been innumerable instances of first aid having been administered at scenes of accidents along the public highways.

Fred Pontin, supervisor of first aid education, Crown Zellerbach Corporation and Rayonier Incorporated, pointed out that, "safety is not a one-man job . . . all have to cooperate." He further says that safety work is something that requires constant drive and cooperation of everyone, including both the employees and the employers. Twenty per cent of

the accidents of industry are due to faulty equipment, according to Mr. Pontin, but the other 80 per cent, "much as we hate to admit it," comes from the fault of some individual.

Mr. Pontin also expressed his appreciation for the fine cooperation with the entire program.

Cecil L. Dilling, manager Western Waxed Paper Company, presided as toastmaster at the first aid certificate dinner, and introduced the guests present.

The employees completing the course were awarded Crown Zellerbach Corporation standard certificates and emblems. Women receiving these awards include the following: Claire Casey, Fay Kennedy, Hazel Pringle, Elizabeth Smith, Ellen Kelly and Henel Lahdenpera.

Men receiving the company awards are C. D. Walton, M. A. Barr, Carl Bauer, A. E. Bishop, Fred Curtis, J. H. Deaton, J. H. Girvan, C. E. Hughes, R. V. Hughes, W. B. Jamison, R. B. Jamison, Russell Lee, Ed. Lindsoug, Don Lyon, F. H. Michaelson, R. M. Monroe, H. A. Monsey, David J. MacKenzie, Harold Sandstrom, Cecil Smith, C. O. Smith, Oliver Suter, Frank G. Myers, Harry Young.

Non-employees completing the course were presented standard first aid certificates issued by the Oregon State Industrial Accident Commission, and included the following persons:

Mrs. C. D. Walton, Mrs. Frank G. Myers, Hazel Monroe, Gertrude Tuggle, Ruth Rickard, Margaret A. Jamison, Lita Hughes, Eleanor Barr and Francis Sandstrom.

Portland Zellerbach Paper 100% War Bond Buyers

• Zellerbach Paper Company, Division of Crown Zellerbach Corporation, Portland, Oregon, has received recognition for being one of the first organizations of its kind to obtain one hundred per cent employee subscription to the regular purchase of War Bonds by payroll deduction. All employees were signed up for the regular purchase of War Bonds early in the month of May and the company was presented with a certificate at the Portland Victory Center ceremonies on June 4th.



FIRST AID DINNER of the employees of the Western Waxed Paper Co., Division of Crown Zellerbach Corp., North Portland, held April 28th at the Columbia-Edgewater Country Club.



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Knowing how to properly lubricate all types of mill equipment is a problem for lubrication engineers. Associated maintains a staff of experts here in the West. Time after time they have gone into plants like yours and recommended money-saving, equipment-saving service methods. Now at a time when mill equipment is at a premium, proper lubrication service is doubly important. It's good advice to call in the Associated Lubrication Engineer in your locality to make a survey of your plant. There's no obligation. Just phone Tide Water Associated Oil Company or our distributor in your city.

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**ASSOCIATED SPECIAL
MILL LUBRICANTS**

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Steam Cylinder Oils

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**Cadel N. C. Diesel Engine
Lubricant**

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*(And hundreds of other petroleum
products to serve specific needs)*



Oil is Ammunition



Use it Wisely



Ritchie Joins Carpenter Paper Co.

● C. M. Ritchie who for the past five and a half years has been connected with the San Francisco office of the Everett Pulp & Paper Company, is now with the Carpenter Paper Company, San Francisco.

Fred Stockwell In Charge Pacific Paperboard Washington Sales

● Fred A. Stockwell, well known Pacific Northwest paper and board salesman was placed in charge of sales in the state of Washington for the Pacific Paperboard Company of Longview on May 1st. Mr. Stockwell's headquarters are at 2901 Elliott Avenue, Seattle.

Mr. Stockwell was a pressman before he joined the American Type Founders Company in Spokane as a traveling representative in 1912. At that time the company carried a stock of paper in addition to printing equipment. In 1919 the Zellerbach Paper Company bought the American Type Founders paper stock and opened a branch in Spokane. He remained with Zellerbach as a salesman.

In 1926 Mr. Stockwell was named division manager for the Zellerbach Paper Company in Spokane but left in 1933 to go to Portland where he installed a wrapping papers section for Carter, Rice & Company Corporation. Last year he resigned to open a similar department for the Pacific Wholesale Stationery & Printing Company of Portland. He resigned in April of this year to become associated with Pacific Paperboard Company. Mr. Stockwell is no stranger to Seattle having been in the city many times and knowing many of the paper men.

Assisting Mr. Stockwell is Van T. Burleigh who is thoroughly familiar with board manufacturing as he has been in the Pacific Paperboard mill working on the machines for the past five years.



VAN T. BURLEIGH, Pacific Paperboard, assisting Mr. Stockwell.

Pulp Production Up 16% In First Four Months

● American pulp mills have responded to the demand for more and more wood pulp with an increase of 504,248 tons or 16 per cent in the first four months of 1942 over the same period of 1941. This year production of all grades amounted to 3,690,623 tons as compared with 3,186,375 tons in 1941, according to the United States Pulp Producers Association monthly statistical summary.

With a rated capacity of 1,058,798 tons for the first four months, the sulphite pulp industry produced at a rate of 100.5 per cent of capacity. The sulphate pulp mills, with a four months rated capacity of 1,610,064 tons produced at a rate of 100.4 per cent of capacity, states the Association.

Bleached sulphite pulp production of 606,893 tons in the first four months of the year was 67,646 tons or 12.5 per cent greater than the 539,247 tons produced in the same period of 1941.

Unbleached sulphite pulp produced in the first four months of 1942 amounted to 457,301 tons, a gain of 94,572 tons or 26 per cent over the 362,729 tons produced in the same period last year.

Bleached sulphate pulp production declined in the first four months of the current year by 12,588 tons, 5.4 per cent, from 232,212 tons in the first four months of

1941 to 219,624 tons in the same period this year.

Unbleached sulphate pulp production climbed from 1,156,552 tons in the first four months of 1941 to 1,397,279 tons in the same period of 1942, a gain of 240,727 tons or 20.7 per cent.

Soda pulp production of 220,117 tons this year was 26,978 tons or 13.9 per cent higher than the 193,139 tons produced in the first four months of 1941.

Semi-chemical pulp production of 80,457 tons was 18,275 tons or 29.4 per cent higher than the 62,182 tons produced in the first four months of 1941.

Mechanical pulp production of 701,994 tons gained 65,754 tons or 10.3 per cent over the 636,240 tons produced in the same 1941 period.

Pulp used during the first four months of the current year totaled 2,907,115 tons against 2,536,421 tons, an increase of 370,694 tons or 14.6 per cent.

Domestic shipments amounted to 635,552 tons in the first four months of 1942. This was 99,505 tons, 18.5 per cent, more than the 536,047 tons domestic shipments in the same 1941 period.

Wood pulp exports in the first four months totaled 112,169 tons, a decline of 12,345 tons or 10 per cent below the 124,514 tons exported in the same 1941 period.

Stocks on hand for own use at the end of April, 1942, amounted to 120,618 tons against 111,993 tons at the end of March and 127,956 tons at the end of April, 1941. The April, 1942 total was made up of 9,337 tons of bleached sulphite; 10,787 tons of unbleached sulphite; 3,810 tons of bleached sulphate; 11,492 tons of unbleached sulphate; 3,321 tons of soda pulp; 127 tons of semi-chemical pulp; and, 80,688 tons of mechanical pulp.

Stocks on hand for market at the end of April, 1942, totaled 11,741 tons as compared with 24,420 tons at the end of March and 49,903 tons at the end of April, 1941. This was made up of 6,809 tons of bleached sulphite; 2,470 tons of unbleached sulphite; 341 tons of bleached sulphate; 593 tons of unbleached sulphate. There were no stocks on hand for market at the mills producing soda and semi-chemical pulps. There were 1,403 tons of mechanical pulp on hand at producing mills earmarked for market.



FRED A. STOCKWELL, In charge Pacific Paperboard sales in Washington.

OPA Holds Paper, Board, Box Meetings in San Francisco

• Approximately 200 wholesale paper merchants and corrugated and solid fibre box manufacturers attended a meeting called by the Office of Price Administration at the Palace Hotel, May 14 and 15.

OPA price executives and attorney discussed the background and purpose of the general price regulation, and explained those provisions applicable to the wholesale paper trade and other branches of the industry.

The morning of May 14 was devoted to distributors of paper and paper products and the meeting was conducted by J. F. Strub, chief of the distributor's section, Paper & Paper Products Division, OPA, Washington, D. C.

That afternoon the meeting was for manufacturers of corrugated and solid fibre products and this meeting was conducted by W. H. Walker, business specialist, corrugated and solid fibre products, Paper Board & Paper Board Products Section of the Paper Branch of OPA, Washington, D. C.

The meetings next day were conducted by Walker also and were for manufacturers of folding cartons and setup boxes.

All four of these meetings were conducted on the same general basis. The purpose was twofold: to explain the background of price regulations and the application of the law to the paper industry.

Strub and Walker outlined the President's Seven Point National Economy Program, discussing the cost of World War I in total, explaining that part of these costs were due to inflation and declaring that inflation had already added more to our cost of this war than the total cost of World War I. The evils of inflation were given, both from the economic and political standpoint and the necessity for a permanent holding of the present inflationary tendency was stressed.

Must Absorb Added Costs

• In answer to a question of increased costs of delivery due to higher transportation charges after March, it was pointed out that these increases would have to be absorbed and could not be passed on to the consumer; likewise all increased labor costs.

Strub advised paper distributors that seasonal merchandise such as Christmas goods and items sold exclusively to the fruit and vegetable industries would be the subject of governmental regulations. It was also pointed out to the distributors that their replacement costs on most items by Schedule 130 dealt with newsprint and Schedule 129 dealt with a great variety of paper items.

Meetings on Thursday afternoon and Friday morning, handled by W. H. Walker, centered around the method of computing raw material costs insofar as the integrated mills in the industry are concerned and the margin between cost and selling price insofar as the "General Weighted Average" method set forth in the proposed supplementary regulation is concerned. It was the consensus of opinion among those in the industry that the "General Weighted Average" method of determining the profit margin to be used is not practicable or equitable and that it would result in gross inequalities

both from the manufacturer and consumer viewpoints.

It was further the consensus of opinion that the method of figuring raw material costs must be uniform whether an integrated mill or a strictly manufacturing converter is involved.

Carl Fahlstrom Wins Bowling Award

• Carl Fahlstrom, assistant manager, Longview Fibre Co., Longview, took part in the Northwest Bowling Congress in Seattle, May 16th and came out with a check for \$42.50 to prove he had tied at 578 for third place in the "B" Singles.

Otto Hartwig's Son Receives Army Wings

• Otto Robert Hartwig, Jr., son of Otto Hartwig, social security and general safety supervisor for Crown Zellerbach Corporation and Rayonier Incorporated, received his wings in the United States Army Air Corps on April 24th, when he was commissioned as a Second Lieutenant. He has been training as an air cadet during the past eight months.

Mr. Hartwig attended the commissioning services at Stockton Field, California, after having left his office in Portland, Oregon, the same week.

Fred Olmsted Honored By Industrial Conference

• Fred A. Olmsted, technical supervisor of the Crown Willamette Paper Company, Division of the Crown Zellerbach Corporation, Camas, was one of three speakers at the dinner which concluded the "Conference on Manning and Managing Our Arsenal," held at the California Institute of Technology in Pasadena on May 2nd.

This honor was conferred upon Mr. Olmsted for his winning of first prize in the contest held by the National Industrial Conference Board for the best letter on the subject, "How Can a Foreman Meet the Challenge of All-Out Defense Production?" It was upon this subject that Mr. Olmsted spoke. (See Pacific Pulp & Paper Industry, March, 1942, for the letter).

The one-day session, which was attended by a number of pulp and paper men, included a general morning session at which speakers discussed "Current Production Problems" and "Industrial Relations and the Foreman." The afternoon session was divided into the following seminars: Inventory Control, Methods, Improvement, Sub-Contracting, Union-Management Cooperation, Selection, Applications of Job Analysis and Job Evaluation, Production Control, Handling Grievances, Accident Prevention and Safety, Training, Retooling for War Work, and Women In War Industries. The other speakers at the dinner besides Mr. Olmsted were: Dr. Vernon D. Keeler, assistant professor of management and industry, University of California at Los Angeles, who spoke on "The Present Significance of Scientific Management;" and L. A. Appley, vice president, Vick Chemical Company, New York, serving as expert consultant to the Secretary of War, who spoke on "All-Out Mobilization of Man Power."



During 1941 Puget Power's Residential and Rural customers purchased an average of 205 kilowatt hours more than in 1940. Although this was an increase in use of 13.6%, the increase in the average customer's annual bill was a little over one-tenth of one per cent, or only five cents in actual cash.

OUR POLICY:

The Maximum of Electric Service for the Electric Dollar

PUGET SOUND POWER & LIGHT COMPANY

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Make the ST. FRANCIS your home! Take advantage of the gracious service, famous cuisine and central location. You'll enjoy your visit more if you are at the ST. FRANCIS

1000 rooms, all with bath

From \$4 one person, \$6 two persons

OVERLOOKING UNION SQUARE

HOTEL ST. FRANCIS
MANAGEMENT DAN E. LONDON

Plants Are Now Well Protected

Recent warnings of civilian defense authorities that all civilian and industrial protective plants should be rechecked and those in charge be doubly on the alert found the Port Angeles, Wash., division of Crown Zellerbach Corporation, Rayonier Incorporated and Fibreboard Products Inc., well prepared for any emergency.

Both before and since Pearl Harbor, management of the plants had taken steps to organize effectively for protection of personnel and property in time of war emergency and for blackouts and other necessities of the times.

At Rayonier, resident manager W. E. Breitenbach announced appointment of S. W. Grimes, personnel and safety supervisor, as defense coordinator for the plant defense committee. Others on the committee include Mr. Breitenbach, C. T. Mulledy, general superintendent; E. H. Vicary, consulting engineer; Meder Johnson, resident engineer; H. T. Fretz, chief chemist; G. L. Johnston, sawmill superintendent; H. E. Springer, chief electrician; H. A. Searles, chief pipefitter, and Pat Cannon, chief engineer (power and steam).

These and the following others have been designated as Emergency Plant Defense Men and are asked to report immediately to the plant when a blackout signal sounds: H. A. Sprague, assistant manager; R. L. Plummer, assistant personnel and safety supervisor; H. V. Charnell, assistant chief chemist, in charge of decontamination and first aid; J. G. Hardy, sulphite superintendent; shift superintendents H. E. Weller, P. W. Blatter, F. R. Radke and J. C. Fey; D. E. Lawson, filter plant supervisor; E. R. Pollock, pipefitter, assistant fire chief; G. Montgomery, assistant chief engineer (power and steam); C. C. Sturtevant, boiler repairman; Max Johnson, paint foreman, in charge of blackouts; George Day, yard foreman; Fred Dangerfield, master mechanic; D. E. Wright, E. J. O'Neill and G. W. Zimmer, millwrights; B. V. Decker, pipefitter foreman; pipefitters L. K. Hettman, E. J. Murray, H. J. Murray and W. J. Baker; A. W. Arvidson, assistant chief electrician, and Electricians L. E. Hudson, E. H. Wagner and C. E. Larson.

First aid squads, fire department and other special groups are well organized on every shift and have definite instructions what to do in case of raid alarm. All departments except the fire lumber side operate during blackouts. Everything except the power plant and filter plant is to shut down in case of actual raid alarm.

Resident manager R. E. Bundy is plant defense coordinator of the Fibreboard Products plant. Assistants and wardens are C. V. Basom, E. J. Cavanaugh, T. H. Beaune, J. W. Bonnar, J. H. Clay and C. F. Meagher; fire chief is A. F. Benson, first aid director is R. A. Lawrence, and the chemical and decontamination chief is N. Q. Hartnagel, all key men in the mill personnel. Fire protection leaders are G. Albright, T. Mellor, W. F. Blair, T. L. Lemmon, C. N. Middaugh, M. Darnell, C. J. Wright, Paul C. Wait, Henry Jones, C. B. Keller, J. Hardwick, R. Bartholomew, C. Heckman, H. M. Hendrickson and G. E. Cox. First aid squad leaders are A. J. Goerg, N. A. Lloyd, P. T. Hopf and H. E. Simpson and chemical protection leaders, R. O. Holcomb, E. M. Bennett, H. E. Ross and Joseph Wolfe.

At the Crown Zellerbach plant, where

resident manager Raymond A. Dupuis designated M. R. Cashman, personnel and safety supervisor, as defense coordinator, emphasis has been placed on organizing a completely self-sufficient defense organization for each shift. The plant defense committee, in addition to Mr. Dupuis and Mr. Cashman, includes L. L. Dupuis, superintendent; J. W. Edwards, assistant superintendent; T. B. Hargreaves, resident engineer; Ray Austin, chief chemist; O. S. Cauvel, sulphite superintendent; H. A. Larsen, chief electrician; C. C. Hudson, chief pipefitter, and W. M. Locke, chief engineer.

Detailed instructions have been developed at the three mills for each department with key men on each shift assigned to certain duties in case of blackout and raid alarms. Preparations have been made for auxiliary water and power

facilities. Each plant has increased the policing of its property since December 7th and employes wear identification badges.

Francis Jackson Wins First In Photographic Contest

H. Francis Jackson, machine tender at the Everett mill, Pulp Division Weyerhaeuser Timber Co., was pleasantly surprised to receive a letter April 28th notifying him that his portrait of a "War Worker," had been awarded first prize in the Univex-Mercury Photographic Contest. The prize was four \$100 War Bonds.

Mr. Jackson's entry was a 11 x 14 enlargement of a single frame 35 mm. negative taken with a Mercury camera.

FIELD NOTES

SAVE FUTURE FAILURES

with instant repairs

When a break appears in the rubber covers of a conveyor belt, don't wait for a week-end shutdown to make repairs. Small holes quickly become large ones, cause abnormal deterioration of the carcass. Keep a can of tire dough and cement on the job always... charge one person on each shift with making repairs at the first possible shutdown.

A few minutes out at the time of a small break will save many hours' delay later. Proper repairs help a belt give longer service.

This is good practice to follow right now in particular, when more and more rubber is being restricted to strictly war-time production.

RUBBER FOR VICTORY

We're one of the few manufacturers with the equipment and research required for vulcanizing rubber to propeller shafts for our new two-ocean navy. "Victory" orders must come first; our present customers as close a second as we are permitted. **PIONEER RUBBER MILLS.**
353 Sacramento St., San Francisco


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Job Tailored

CONVEYOR BELTS



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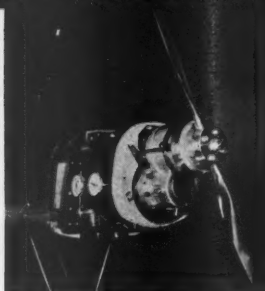
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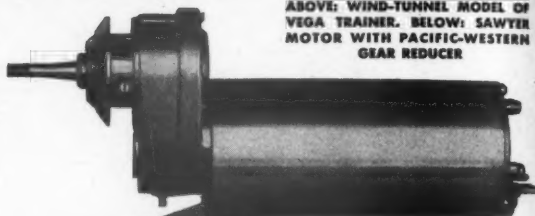
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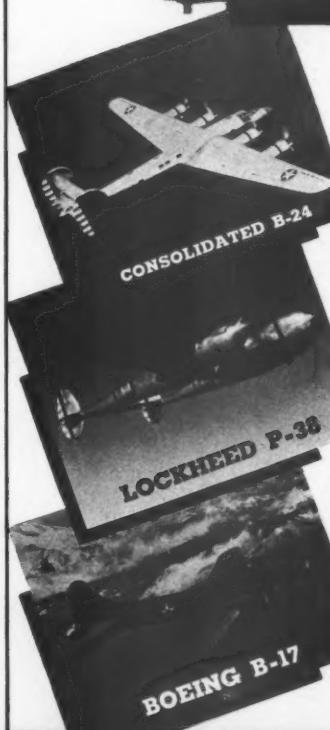
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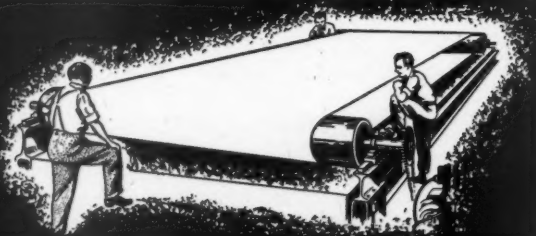
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